

# Curriculum Vitae

## Harley D. Eades III

Business Address: Summerville Campus  
Allgood Hall E-132  
2500 Walton Way  
Augusta, Georgia 30904  
Phone: (706)667-4543  
Email: [heades@augusta.edu](mailto:heades@augusta.edu)  
Web: <http://www.metatheorem.org>

## Education and Professional History

### Higher Education

Doctor of Philosophy in Computer Science, University of Iowa, IA, August 2014.

Masters of Science in Computer Science, University of Iowa, IA, May 2013.

Bachelor of Science in Applied Mathematics and Computer Science, Millikin University, IL, May 2009.

### Additional Education

JAIST Spring School: Formal Reasoning: Theory and Application, JAIST, Kanazawa, Japan, March 2012.

Oregon Programming Languages Summer School, University of Oregon, Eugene, OR., July 2011.

### Academic Positions

Assistant Professor of Computer Science, August 2014 - Present, Augusta University.

### Honors

Recognized for Scholarship at the Annual Celebration of Faculty, Augusta University, 2018.

The Graduate College Summer Fellowship, University of Iowa, 2013.

The Strategic Initiative Funds Fellowship, University of Iowa, 2011.

Mathematics and Computer Science Award, Millikin University, 2009.

Mathematics and Computer Science Award, Millikin University, 2008.

Mathematics and Computer Science Award, Millikin University, 2007.

## Memberships

ACM Special Interest Group on Logic and Computation, member.

ACM Special Interest Group on Programming Languages, member.

European Association of Theoretical Computer Science, member.

## Teaching at Augusta University (2014 - Present)

### Teaching Assignments

SEMESTER	COURSE TAUGHT		
	Course Number and Title	Students Enrolled	
Spring 2018	CSCI:3030 “Mathematical Structures in Computer Science“	23	
	CSCI:3500 “Theory of Computation“	18	
Fall 2017	CSCI:3030 “Mathematical Structures in Computer Science“	25	
	CSCI:3300 “Programming Languages Concepts“	13	
	CSCI:3500 “Theory of Computation“	17	
Spring 2017	CSCI:3030 “Mathematical Structures in Computer Science“	21	
	CSCI:3500 “Theory of Computation“	14	
Fall 2016	CSCI:3030 “Mathematical Structures in Computer Science“	12	
	CSCI:3300 “Programming Languages Concepts“	10	
	CSCI:3500 “Theory of Computation“	7	
Spring 2016	CSCI:3030 “Mathematical Structures in Computer Science“	5	
	CSCI:3500 “Theory of Computation“	21	
Fall 2015	CSCI:3030 “Mathematical Structures in Computer Science“	18	
	CSCI:3300 “Programming Languages Concepts“	13	
	CSCI:3500 “Theory of Computation“	12	
Spring 2015	CSCI:3030 “Mathematical Structures in Computer Science“	22	
	CSCI:3500 “Theory of Computation“	17	
Fall 2014	CSCI:3300 “Programming Languages Concepts“	20	
	CSCI:3500 “Theory of Computation“	6	

### Students Supervised (AU)

Standing	Student Name	Years	Outcome
Undergraduate	Blake Watkins	Summer 2018 - Present	ongoing
	Aubrey Bryant	Fall 2017 - Present	ongoing
	Preston Keel	Fall 2017 - Present	ongoing
	Gisela Font-Sayers	Fall 2016 - Spring 2017	masters student U. Nebraska-Lincoln
	Michael Townsend	Summer 2016 - Fall 2017	masters students Georgia Tech
	Matthew Tennis	Summer 2016 - Spring 2017	graduated
	Chad Reynolds	Spring 2014 - Spring 2015	graduated

### Visiting Graduate Students Supervised

Standing	Student Name	Time
Tulane University, Ph.D. Program in Mathematics	Nathan Bedell	Summer 2018 - Present
North Carolina State University, Ph.D. Program in Computer Science	Jiaming Jiang	Summer 2016 - Fall 2017
University of Iowa, Ph.D. Program in Computer Science	Richard Blair	Summer 2017

# Scholarship

## Journal Publications

1. **Constructive Temporal Logic, Categorically.** Valeria de Paiva and Harley Eades III. IFCoLog Journal of Logic and its Applications. 01 February 2017. Volume 4, Number 4, Special Issue Dedicated to the Memory of Grigori Mints. 21 pages in length.
2. **Dualized Simple Type Theory.** Harley D. Eades III, Aaron Stump, Ryan McCleary. Logical Methods in Computer Science, 15 August 2016. Volume 12, Issue 3. 47 pages in length. DOI: 10.2168/LMCS-12(3:2)2016
3. **Equational Reasoning about Programs with General Recursion and Call-by-value Semantics.** Garrin Kimmell, Aaron Stump, Harley D. Eades III, Peng Fu, Tim Sheard, Stephanie Weirich, Chris Casinghino, Vilhelm Sjöberg, Nathan Collins and Ki Yung Ahn. Special Issue on Advanced Programming Techniques for Construction of Robust, General and Evolutionary Programs. Progress in Informatics, pages 19-46, March 2013, journal version of PLPV12 paper.

## Conference and Symposium Publications

1. **Dialectica Categories for the Lambek Calculus.** Valeria de Paiva and Harley Eades III. In In Sergei Artemov and Anil Nerode, editors, Proceedings of the Symposium of Logical Foundations of Computer Science (LFCS), Deerfield Beach, Florida, United States, Jan. 8-11, volume 1073 of Lecture Notes in Computer Science, pages 256-272. Springer International Publishing, 2018. DOI: 10.1007/978-3-319-72056-2\_16. Acceptance rate: 56%.
2. **Multiple Conclusion Linear Logic: Cut Elimination and More.** Harley D. Eades III and Valeria de Paiva. In Sergei Artemov and Anil Nerode, editors, Proceedings of the Symposium of Logical Foundations of Computer Science (LFCS), Deerfield Beach, Florida, United States, Jan. 4-7, volume 9537 of Lecture Notes in Computer Science, pages 90-105. Springer International Publishing, 2016. DOI: 10.1007/978-3-319-27683-0\_7. Acceptance rate: 57%.

## Workshop Publications

1. **On Linear Logic, Functional Programming, and Attack Trees.** Harley Eades III, Jiaming Jiang, and Aubrey Bryant. To appear: The Fifth International Workshop on Graphical Models for Security (GraMSec), co-located with Computer Security Foundations, in conjunction with the Federated Logic Conference. July 2018. 15 pages in length.
2. **Extended Abstract: On the Lambek Calculus with an Exchange Modality.** Jiaming Jiang, Harley Eades III, and Valeria de Paiva. To appear: The Joint Workshop on Linearity & TLLA, co-located with Third International Conference on Formal Structures for Computation and Deduction (FSCD) in conjunction with the Federated Logic Conference. July 2018. 8 pages in length.
3. **Extended Abstract: Explaining Type Errors.** Brent Yorgey, Richard A. Eisenberg, and Harley D. Eades III. Off the Beaten Track (OBT). Associated with The 45th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL). January 2018. 2 pages in length.
4. **Introducing a New Project on The Combination of Substructural Logics and Dependent Type Theory.** Harley Eades III. International Workshop on Trends in Linear Logic and Applications (TLLA) affiliated with the Second International Conference on Formal Structures for Computation and Deduction (FSCD). 31 July 2017. 2 pages in length.

5. **Abstract: Dialectica categories for the Lambek calculus.** Valeria de Paiva and Harley D. Eades III. Association for Symbolic Logic (ASL) Spring Meeting jointly held with the Annual Meeting of the Pacific Division of the American Philosophical Association. April 2017. 2 pages in length.
6. **Abstract: On Linear Modalities for Exchange, Weakening, and Contraction.** Harley D. Eades III and Jiaming Jiang. Workshop on Linear Logic, Mathematics, and Computer Science. Associated with Linear Logic: Interaction, Proofs, and Computation (LL2016). November 2016. 2 pages in length.
7. **Extended Abstract: Reconsidering Intuitionistic Duality.** Aaron Stump, Harley D. Eades III, and Ryan McCleary. Workshop on Control Operators and their Semantics (COS). Affiliated with Rewriting, Deduction, and Programming (RDP). June 2013. 5 pages in length.
8. **Hereditary Substitution for the  $\lambda\Delta$ -Calculus.** Harley D. Eades III and Aaron Stump. In Ugo de'Liguoro and Alexis Saurin, editors, Proceedings First Workshop on Control Operators and their Semantics, Eindhoven, The Netherlands, June 24-25, 2013, volume 127 of Electronic Proceedings in Theoretical Computer Science, pages 45-65. Open Publishing Association, 2013.
9. **LFSC for SMT Proofs: Work in Progress.** Aaron Stump, Andrew Reynolds, Cesare Tinelli, Austin Laugesen, Harley D. Eades III, Corey Oliver and Ruoyu Zhang. Proof Exchange For Theorem Proving (PxTP). 2012. 7 pages in length.
10. **Irrelevance, heterogeneous equality, and call-by-value dependent type systems.** Wilhelm Sjöberg, Chris Casinghino, Ki Yung Ahn, Nathan Collins, Harley D. Eades III, Peng Fu, Garrin Kimmell, Tim Sheard, Aaron Stump, and Stephaine Weirich. In J. Chapman and P. B. Levy, editors, Proceedings Fourth Workshop on Mathematically Structured Functional Programming, Tallinn, Estonia, 25 March 2012, volume 76 of Electronic Proceedings in Theoretical Computer Science, pages 112-162. Open Publishing Association, 2012.
11. **Equational Reasoning about Programs with General Recursion and Call-by-value Semantics.** Garrin Kimmell, Aaron Stump, Harley D. Eades III, Peng Fu, Tim Sheard, Stephanie Weirich, Chris Casinghino, Vilhelm Sjöberg, Nathan Collins and Ki Yung Ahn. The Sixth ACM SIGPLAN Workshop Programming Languages meets Program Verification (PLPV), pages 15-26, 2012.
12. **Hereditary Substitution for Stratified System F.** Harley D. Eades III and Aaron Stump. International Workshop on Proof-Search in Type Theories (PSTT), 2010. Affiliated with the Federated Logic Conference (FLoC). 7 pages in length.

## Posters

1. **Full Intuitionistic Linear Logic (FILL).** Harley D. Eades III and Valeria de Paiva. Entry in Encyclopedia of Proof Systems. Presented as a Poster at the 25th jubilee edition of the International Conference on Automated Deduction (CADE). <http://proofsystem.github.io/Encyclopedia/>. 2015.

## Workshop Talks

1. **Dualized Type Theory.** Harley D. Eades III. Fifth International Workshop on Classical Logic and Computation (CL&C). July 2014. Affiliated with CSL-LICS 2014. Length: 20min.
2. **On the Categorical Structure of Bi-Intuitionistic Logics.** Harley D. Eades III. The University of Iowa Mini-Symposium. October 2013. Length: 30min.
3. **The Categorical Structure of Semi-Bilinear Intuitionistic Logic.** Harley D. Eades III. Midwest Verification Day. September 2013. Length: 20min.

4. **Hereditary Substitution for the  $\lambda\Delta$ -Calculus.** Harley D. Eades III. Workshop on Control Operators and their Semantics (COS). Affiliated with Rewriting, Deduction, and Programming (RDP). June 2013. Length: 20min.
5. **Hereditary Substitution for the  $\lambda\Delta$ -Calculus.** Harley D. Eades III. Midwest Verification Day. September 2012. Length: 20min.
6. **Hereditary Substitution for the  $\lambda\Delta$ -Calculus.** Harley D. Eades III. Fourth International Workshop on Classical Logic and Computation (CL&C). July 2012. Affiliated with ICALP 2012. Length: 20min.
7. **Separation of Proof from Program.** Harley D. Eades III. Midwest Verification Day. September 2011. Length: 20min.
8. **Exploring the Reach of Hereditary Substitution.** Harley D. Eades III. Types for Proofs and Programs (TYPES). 2011. Length: 30min.
9. **Hereditary Substitution for Stratified System F.** Harley D. Eades III. International Workshop on Proof-Search in Type Theories (PSTT). July 2010. Length: 20min.

### Invited Speaker

1. **The Three Perspectives of Computation.** Harley D. Eades III. Department of Mathematical Sciences Colloquium Speaker. October 2016. Length: 55min.
2. **A New Foundation of Attack Trees in Monoidal Categories.** Harley D. Eades III. Computer Science Department Colloquium Speaker. The University of Iowa. September 2016. Length: 60min.

### Undergraduate Research Publications

1. **Zero-Divisors and Their Graph Languages.** Harley D. Eades III. Rose-Hulman Undergraduate Mathematics Journal. Vol. 10, Issue 2, 2009.

### Other Work

1. **Lambek Calculus.** Harley D. Eades III and Valeria de Paiva. Entry in Encyclopedia of Proof Systems. <http://proofsystem.github.io/Encyclopedia/>. 2016.
2. **Two-sided Linear Sequent Calculus.** Elaine Pimentel and Harley D. Eades III. Entry in Encyclopedia of Proof Systems. <http://proofsystem.github.io/Encyclopedia/>. 2015.
3. **Constructive Modal Logic S4 (CS4).** Harley D. Eades III and Valeria de Paiva. Entry in Encyclopedia of Proof Systems. <http://proofsystem.github.io/Encyclopedia/>. 2015.
4. **Full Intuitionistic Logic.** Harley D. Eades III and Valeria de Paiva. Entry in Encyclopedia of Proof Systems. <http://proofsystem.github.io/Encyclopedia/>. 2015.

### Funding (Awarded Grants)

Currently active grants are underlined.

1. **IIAP: Verifying Information Flow Secure Programs using Graded Dependent Types.** 2018 Augusta University's Cyber Institute's Interdisciplinary Intramural Awards Program (IIAP) Start date November 1, 2017. 1 year grant, \$9,263.
2. **NSF CCF: 1565557, CRII:SHF: A New Foundation for Attack Trees Based on Monoidal Categories.** Start date March 1, 2016. 2 year grant, \$70,221.

## Service

### Program Committees

- 2018. The Fifth International Workshop on Graphical Models for Security (GramSec).
- 2017. The Fourth International Workshop on Graphical Models for Security (GramSec).
- 2013. The Seventh ACM SIGPLAN Workshop on Programming Languages meets Program Verification (PLPV).

### Reviewing

- Workshop on Logic, Language, Information and Computation (Wollic). 2015. Reviewed: 1 paper.
- Sixteenth International Workshop on Logic and Computational Complexity (LCC). 2016. Reviewed: 1 paper
- Advances in Modal Logic (AiML). 2016. Reviewed: 1 paper.
- The Thirty-First Annual ACM/IEEE Symposium on Logic in Computer Science (LICS). 2016. Reviewed: 1 paper.
- Logica Universalis. 2015. Reviewed: 1 paper.
- The 13th International Conference on Typed Lambda Calculi and Applications (TLCA). 2015. Reviewed: 1 paper.
- Logical Methods in Computer Science. 2015. Reviewed: 1 paper.
- The 7th International Joint Conference on Automated Reasoning (IJCAR). 2014. Reviewed: 1 paper.
- Joint Meeting of the Twenty-Third EACSL Annual Conference on Computer Science Logic (CSL) and the Twenty-Ninth Annual ACM/IEEE Symposium on Logic in Computer Science (LICS). 2014. Reviewed: 1 paper
- Logical Methods in Computer Science. 2013. Reviewed: 1 paper.
- The 11th International Conference on Typed Lambda Calculi and Applications (TLCA). 2013. Reviewed: 1 paper.
- The 19th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS). 2013. Reviewed: 1 paper.
- The 23rd International Conference on Rewriting Techniques and Applications (RTA). 2013. Reviewed: 1 paper.
- The 6th International Joint Conference on Automated Reasoning (IJCAR). 2012. Reviewed: 2 papers.

### University Service

- IT Advisory Committee: Research Advisory Subcommittee, August University, 2016 - Present.
- Curriculum and Academic Policies, Augusta University, 2016 - Present.
- CURS, 2017 - Present.
- S-STEM Workgroup, 2017 - Present.
- CS Education Endorsement Workgroup, 2017 - Present.
- Internal Advisory Committee for the Cyber Institute, Augusta University, 2014 - 2016.

**College Service**

SCCS Faculty Affairs Committee, Augusta University, 2017 - Present.

The Computer Science Curriculum Committee, Augusta University, 2015 - Present.

The HCOB ABET Assessment Committee, Augusta University, 2015 - 2017.

HCOB Faculty Affairs Committee, Augusta University, 2016 - 2017.

The Undergraduate Curriculum Committee, Augusta University, Fall 2015.