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## Education

- 2008 Ph.D., Computer & Information Science, University of Notre Dame, Notre Dame, Indiana, United States
- 2005 M.S., Computer & Information Science, University of Notre Dame, Notre Dame, Indiana, United States

## Work Experience

### Full Time Academic

- Associate Professor, Computer Science, Eckerd College, St. Petersburg, FL, August 2014, August 2016 [Type Work Experience: Full Time Academic]
- Assistant Professor, Computer Science, Eckerd College, St. Petersburg, FL, August 2008, August 2014 [Type Work Experience: Full Time Academic]
- Research Assistant, Computer Science and Engineering, Laboratory for Computational Life Sciences (LCLS), University of Notre Dame, Notre Dame, IN, January 2001, July 2008 [Type Work Experience: Full Time Academic]

## Scholarly Publications and Creative Activities

### Article

- Mathee, K., Cickovski, T. M., Deoraj, A., Narasimhan, G., & Stollstorff, M. (2020). Gut Microbiome and Neuropsychiatric Disorders: Implications for Attention Deficit Disorder. *Journal of Medical Microbiology*, 69(1), 14–24.
- Cickovski, T. M., Aguiar-Pulido, V., & Narasimhan, G. (2019). MATria: A Unified Centrality Algorithm. *BMC Bioinformatics*, 20(S1), 278.
- Cickovski, T. M., & Narasimhan, G. (2018). Constructing Lightweight and Flexible Pipelines Using Plugin-based Microbiome Analysis (PluMA). *Bioinformatics*, 34(17), 2881–2888.
- Cickovski, T. M., Peake, E., Aguiar-Pulido, V., & Narasimhan, G. (2017). ATria: A Novel Centrality Algorithm Applied To Biological Networks. *BMC Bioinformatics*, 18(S8), 239–248.
- Aguiar-Pulido, V., Huang, W., Suarez-Ulloa, V., Cickovski, T., Mathee, K., & Narasimhan, G. (2016). Metagenomics, Metatranscriptomics, and Metabolomics Approaches for Microbiome Analysis. *Evol Bioinform Online*, 12(S1), 5–16.
- Cickovski, T., Flor, T., Irving-Sachs, G. . . , Parda, J., Novikov, P., & Narasimhan, G. (2015). GPUDePiCT: A Parallel Implementation of a Clustering Algorithm for Computing Degenerate Primers on Graphics Processing Units. *IEEE/ACM TCBB*, 12(2), 445–454.
- Sweet, J. C., Nowling, R. J., Cickovski, T., Sweet, C. R., Pande, V. S., & Izaguirre, J. A. (2013). Long Timestep Molecular Dynamics on the Graphical Processing Unit. *Journal of Chemical Theory and Computation*, 9(8), 3267–3281.
- Vance, A., & Cickovski, T. M. (2012). A Case Study on Developing a Classroom Application Using Behavior-Driven Development. *American Journal of Undergraduate Research*, 11(3), 9–16.
- Margolin, G., Gregoretto, I. V., Cickovski, T. M., Li, C., Shi, W., Alber, M. S., & Goodson, H. V. (2012). The Mechanisms of Microtubule Catastrophe and Rescue: Implications from Analysis of a Dimer-Scale Computational Model. *Mol Biol Cell*, 23(4), 642–656.
- Cickovski, T., Chatterjee, S., Wenger, J., Sweet, C. R., & Izaguirre, J. A. (2010). MDLab: A Molecular Dynamics Simulation Prototyping Environment. *Journal of Computational Chemistry*, 31(7), 1345–1356.
- Cickovski, T., Aras, K., Swat, M., Merks, R. M., Glimm, T., Hentschel, H., ... Izaguirre, J. A. (2007). From Genes to Organisms Via the Cell: A Problem-Solving Environment for Multicellular Development. *Computing in Science and Engineering*, 9(4), 50–60.

Cickovski, T. M., Huang, C., Chaturvedi, R., Glimm, T., Hentschel, H., Alber, M. S., ... Izaguirre, J. A. (2005). A Framework for Three-Dimensional Simulation of Morphogenesis. *IEEE/ACM TCBB*, 2(4), 273–288.

Izaguirre, J. A., Chaturvedi, R., Huang, C., Cickovski, T., Coffland, J., Thomas, G., ... Glazier, J. A. (2004). CompuCell, A Multi-Model Framework for Simulation of Morphogenesis. *Bioinformatics*, 20(7), 1129.

Matthey, T., Cickovski, T., Hampton, S., Ko, A., Ma, Q., Nyerges, M., ... Izaguirre, J. A. (2004). ProtoMol, An Object-Oriented Framework for Prototyping Novel Algorithms for Molecular Dynamics. *ACM TOMS*, 30(3), 237–265.

## Proceeding

Cickovski, T. M., Manuel, A., Mathee, K., Campos, M., & Narasimhan, G. (2020). Effects of Various Alpha-1 Antitrypsin Supplement Dosages on the Lung Microbiome and Metabolome (Vol. Lecture Notes in Computer Science (LNCS)), pp. 90–101). Presented at the IEEE 9th International Conference on Computational Advances in Bio and medical Sciences (ICCABS), Miami: Springer. [http://doi.org/https://doi.org/10.1007/978-3-030-46165-2\\_8](http://doi.org/https://doi.org/10.1007/978-3-030-46165-2_8)

Sazal, M., Ruiz-Perez, D., Cickovski, T. M., & Narasimhan, G. (2018). Inferring Relationships in Microbiomes from Signed Bayesian Networks (Vol. 1, p. 1). Presented at the IEEE 8th International Conference on Computational Advances in Bio and medical Sciences (ICCABS), Las Vegas, NV: IEEE. <http://doi.org/10.1109/ICCABS.2018.8542086>

Cickovski, T. M., Aguiar-Pulido, V., & Narasimhan, G. (2017). MATria, A Unified Centrality Algorithm (p. 278). Presented at the IEEE 7th International Conference on Computational Advances in Bio and medical Sciences (ICCABS), Orlando, FL: IEEE. <http://doi.org/10.1109/ICCABS.2017.8114289>

Cickovski, T., Aguiar-Pulido, V. . . , Huang, W., Mahmoud, S., & Narasimhan, G. (2016). Lightweight Microbiome Analysis Pipelines (pp. 225–227). Presented at the International Work Conference on Bioinformatics and Biomedical Engineering (IWBBIO16), Granada, Spain.

Cickovski, T., Peake, E., Aguiar-Pulido, V. . . , & Narasimhan, G. (2015). ATria: A Novel Centrality Algorithm Applied To Biological Networks. Presented at the IEEE 5th International Conference on Computational Advances in Bio and medical Sciences (ICCABS), Miami, FL: IEEE. <http://doi.org/10.1109/ICCABS.2015.7344710>

Cickovski, T., Sweet, C., & Izaguirre, J. A. (2007). MDL, A Domain-Specific Language for Molecular Dynamics. Presented at the 40th Annual Simulation Symposium (ANSS'07), Norfolk, VA: IEEE. <http://doi.org/10.1109/ANSS.2007.26>

"Chaturvedi, R., Izaguirre, J. A., Huang, C., Cickovski, T., Virtue, P., Thomas, G., ... Glazier, J. A. ". (2003). Multi-Model Simulations of Chicken Limb Morphogenesis (Vol. Lecture Notes in Computer Science, vol 2659, pp. "39–49"). Presented at the International Conference on Computational Science, Melbourne, Australia and St. Petersburg, Russia: Springer.

## Reports

Brandtner, D., Cickovski, T. M., & Izaguirre, J. A. (2005). *Interactive Molecular Dynamics*. Notre Dame, IN: University of Notre Dame.

Yau, C. B. B., Cickovski, T. M., & Izaguirre, J. A. (2005). *MDL: Molecular Dynamics Language*. Notre Dame, IN: University of Notre Dame.

Aras, K., Cickovski, T. M., Cieslak, D., & Huang, C. (2005). *Simulation of Chicken Limb Growth with Irregular Domain Shape*. Notre Dame, IN: University of Notre Dame.

Aras, K., Cickovski, T. M., & Izaguirre, J. A. (2005). *Empirical Evaluation of Design Patterns in Scientific Application*. Notre Dame, IN: University of Notre Dame.

Cickovski, T. M., Matthey, T., & Izaguirre, J. A. (2004). *Design Patterns for Generic Object-Oriented Scientific Software*. Notre Dame, IN: University of Notre Dame.

## Presentation, Presented Papers, and Lectures

Sazal, M., Cickovski, T. M., Mathee-Narasimhan, K., & Narasimhan, G. (2020). Inferring Causal Relationships in Microbiomes. In *American Society for Microbiology*. Chicago, IL.

Cickovski, T. M., Paul, P. N., Connor, S., Narasimhan, G., & Mathee-Narasimhan, K. (2020). Veillonellaceae - A Friend or Foe in a Microbiome or a Biomarker for Inflammation. In *American Society For Microbiology*. Chicago, IL.

Cickovski, T. M., Mathee-Narasimhan, K., Aguirre, G., Tatke, G., Stollstorff, M., & Narasimhan, G. (2020). Attention Deficit Hyperactivity Disorder and the Gut Microbiome. In *American Society for Microbiology*. Chicago, IL.

Sazal, M., Ruiz-Perez, D., Valdes, C., Cickovski, T. M., Stebliankin, V., Mehta, A., ... Narasimhan, G. (2019). Signed Bayesian Networks for Microbiomes. In *LatinX in AI*. Vancouver, CA.

Ruiz-Perez, D., Park, J. I., Cickovski, T. M., Kim, J. E., Lee, H., Cho, H., & Narasimhan, G. (2019). Role of Gut Microbiota and their Temporal Interactions in Kidney Transplant Recipients. In *LatinX in AI*. Vancouver, CA.

Ruiz-Perez, D., Park, J. I., Cickovski, T. M., Kim, J. E., Lee, H., Cho, H., & Narasimhan, G. (2019). Role of Gut Microbiota and their Temporal Interactions in Kidney Transplant Recipients. In *Society for Molecular Biology and Evolution*. Manchester, England.

- Cickovski, T. M., & Narasimhan, G. (2018). Constructing Lightweight and Flexible Pipelines Using Plugin-Based Microbiome Analysis (PluMA). In *International Society for Computational Biology*. Chicago, IL.
- Cickovski, T. M., Manuel, A., & Narasimhan, G. (2017). Microbiome Analysis Pipelines: Present And Future. In *American Society for Microbiology*. St. Petersburg, FL.
- Cickovski, T. M., Manuel, A., & Narasimhan, G. (2017). A Flexible and Lightweight Multi-Omics Analysis Pipeline Using Plugin-Based Microbiome Analysis. In *Stanford University*. Stanford, CA.
- Riggs, H., Cickovski, T. M., & Narasimhan, G. (2015). Graphics Processing Unit Biofilm Image Processing (GPUBIP). In *Embry-Riddle Aeronautical University*. Daytona Beach, FL.
- Bryant, J. D., & Cickovski, T. M. (2014). An Environment for Prototyping Molecular Dynamics on the GPU in Python. In *Florida International University*. Miami, FL.
- Cickovski, T. M., Flor, T., Irving-Sachs, G., Novikov, P., Parda, J., & Narasimhan, G. (2014). Hybrid Clustering Algorithms for Degenerate Primer Development on the GPU. In *NVIDIA*. San Jose, CA.
- Vance, A., & Cickovski, T. M. (2012). Narwhal: A Case Study on Developing a Classroom Application Using Behavior Driven-Development. In *Stetson University*. Deland, FL.
- McEwing, K. A., & Cickovski, T. M. (2010). MDInter: A Molecular Dynamics Graphical User Interface. In *University of North Florida*. Jacksonville, FL.
- Cickovski, T. M. (2007). BioLogo: A Domain-Specific Language for Morphogenesis. In *Indiana University*. Bloomington, IN.
- Cickovski, T. M. (2007). BioLogo: A Domain-Specific Language for Morphogenesis (Tutorial). In *Indiana University*. Bloomington, IN.
- Cickovski, T. M., Sweet, C. R., & Izaguirre, J. A. (2007). MDLab Tutorial. In *University of Minnesota*. Minneapolis, MN.
- Cickovski, T. M., & Izaguirre, J. A. (2006). BioLogo: A Domain-Specific Language for Morphogenesis. In *Indiana University*. Bloomington, IN.
- Cickovski, T. M., Aras, K., Swat, M., Merks, R., Glimm, T., Hentschel, G., ... Izaguirre, J. A. (2006). CompuCell3D: A Problem Solving Environment for Multicellular Development. In *Indiana University*. Bloomington, IN.
- Cickovski, T. M., & Izaguirre, J. A. (2006). Domain-Specific Languages in Computational Biology. In *University of Illinois at Urbana-Champaign*. Urbana, IL.
- Cickovski, T. M., & Izaguirre, J. A. (2005). The Molecular Dynamics Lab (MDLab). In *Interdisciplinary Center for the Study of Biocomplexity (ICSB)*. University of Notre Dame.
- Cickovski, T. M., Merks, R. M. H., & Izaguirre, J. A. (2005). BioLogo: A Domain-Specific Language for Morphogenesis. In *Interdisciplinary Center for the Study of Biocomplexity (ICSB)*. University of Notre Dame.
- Cickovski, T. M., Aras, K., Swat, M., Merks, R., Glimm, T., Hentschel, G., ... Izaguirre, J. A. (2005). CompuCell3D: A Problem Solving Environment for Multicellular Development. In *Interdisciplinary Center for the Study of Biocomplexity (ICSB)*. University of Notre Dame.
- Cickovski, T. M., Chaturvedi, R., & Izaguirre, J. A. (2005). CompuCell3D, A Framework for Three-Dimensional Simulation of Morphogenesis. In *SIAM*. Orlando, FL.
- Cickovski, T. M., Chaturvedi, R., & Izaguirre, J. A. (2004). CompuCell: A Software Framework for Simulations of Morphogenesis. In *Indiana University*. Bloomington, IN.
- Cickovski, T. M., & Izaguirre, J. A. (2003). BioLogo: An XML-Based Domain-Specific Language for Simulations of Morphogenesis. In *Indiana University*. Bloomington, IN.
- Cickovski, T. M., & Izaguirre, J. A. (2003). BioLogo: An XML-Based Domain-Specific Language for Simulations of Morphogenesis. In *Western Illinois University*. Macomb, IL.

### **Creative Work and Production**

- Nowling, R. J., & Cickovski, T. M. (2012). *Prototype to Release: Software Engineering for Scientific Software*. Stanford University. Stanford, CA: National Institute of Health.

### **Intellectual Property**

- Cickovski, T. M., Manuel, A., Mathee, K., Campos, M., & Narasimhan, G. (2020). Significance of Glutamine in Lung Microbiome of Alpha-1 Antitrypsin Deficiency (A1AD) and Chronic Obstructive Pulmonary Disorder (COPD) Patients. D2020-0077.

### **Submitted Manuscripts**

- Nayman, E., Polanco, F., Cickovski, T. M., Narasimhan, G., & Mathee, K. (2020). Heterogeneous Networks Involving Amplicon Sequence Variants in Alpha-1 Antitrypsin Deficiency Patients. *Metabolites: Special Issue on "Microbiome and Metabolome"*
- Connor, S., Paul, P., Cickovski, T. M., Narasimhan, G., & Mathee, K. (2020). Veillonellaceae — A Friend or Foe in Microbiome? *Microbiome*.

Cickovski, T. M., Mathee-Narasimhan, K., Aguirre, G., Tatke, G., Hermida, A., Narasimhan, G., & Stollstorff, M. L. (2020). Individuals with Attention Deficit Hyperactivity Disorder have Altered Gut Microbiome. *Journal of Medical Microbiology*.

Campos, M., Fernandez, M., Wanner, A., Holt, G., Donna, E., Mendes, E., ... Narasimhan, G. (2020). Lower Respiratory Tract Microbiome Composition and Community Interactions in Smokers. *Scientific Reports*.

## Teaching Innovation and Other Relevant Teaching Activities

### Fall 2020 - Ongoing

COP4604-RVC, New courses developed or significantly revised

Asynchronous learning

Course restructuring, New Course - Creation/Delivery: Online,

Migrated COP4604 (Advanced Unix programming) to an online setting. Restructured the course and incorporated new tools for asynchronous learning, including Zoom, Discord, and Github.

CDA3102-(UHA/RVC), New courses developed or significantly revised,

Synchronous and asynchronous learning

Course restructuring, New Course - Creation/Delivery: Online,

Migrated CDA3102 (Computer Architecture) to hybrid and online sections. Restructured the course and incorporated new tools for synchronous/asynchronous learning, including Zoom and Discord

CDA4101-RVC, New courses developed or significantly revised,

Asynchronous learning

Course restructuring, New Course - Creation/Delivery: Online,

Migrated CDA4101 (Structured Computer Organization) to an online setting. Restructured the course and incorporated new tools for asynchronous learning, including Zoom and Discord.

### Spring 2020 - Ongoing

SCIS Evaluating Teaching Rubric, Other Activities related to teaching innovations,

Proposed rubric for Department of Computer Science

Evaluating Teaching, Development of discipline-based practice tools,

Proposed a rubric for evaluating teaching in the computer science discipline. Held meetings and collected feedback from faculty. Continue to make iterative modifications.

LMSStar, Use of technology and software,

Open source software for educators

Inter-LMS compatibility, Instructional Software Product ,

An open-source suite of scripts for converting between file formats of some of the most popular Learning Management Systems (LMS). Currently supported LMSs include: Gradescope, Canvas, and ZyBooks.

### Fall 2019 - Ongoing

BS in Cybersecurity, New courses developed or significantly revised,

Work with UGC colleagues

Cybersecurity Flowchart, New course Development Approved by Col or Dept ,

The B.S. in Cybersecurity prepares students for cybersecurity professional career with a primary focus on information security analysis.

New Fall 2020: <https://www.cis.fiu.edu/academics/degrees/undergraduate/>

### Fall 2019 - Fall 2019

NVIDIA Deep Learning Institute (DLI), Undergraduate research projects,

Caffe plugin

Independent Study, Student Assign-Independent Studies ,

Student Supervised: Mark Fajet; FIU

Project: Effectively incorporate tools from NVIDIA's Deep Learning Institute (DLI, <https://developer.nvidia.com/deep-learning>) into a plugin extension for the PluMA package (<http://biorg.cs.fiu.edu/pluma>), and test performance with some examples that use machine learning.

### Spring 2019 - Ongoing

FIU Center for Advancement of Teaching (CAT) Fellow, Other Activities related to teaching innovations,

Communication, website design

CAT Evaluating Teaching(ET) website, Publicly Available Doc Describing the Design ,

Communicated with other CEC departments on Evaluating Teaching (ET) initiative. Contact point for questions.  
Developed new [ET website](#) for CAT, now accessible University-wide via Panther180

CDA3102: Computer Architecture, New courses developed or significantly revised,

Work with UGC colleagues

New SCIS hardware course, New course Development Approved by Col or Dept ,

Covers the levels of organization in a computer: digital logic; machine and assembly language programming, design of memory, buses, ALU, CPU; virtual memory, I/O

SCIS Curriculum Restructuring, Course coordination,

Work with UGC colleagues

Curriculum modification, New course Development Approved by Col or Dept ,

Due to the current structure of our current CS curriculum with only three elective courses, students are unable to take a cross-section of courses that expose them to emerging technologies, thereby reducing their placement opportunities. The emphasis of FIU's initiative on 4-year graduation rates requires the reduction in the length of the pre-requisite chain of courses in order for students to fulfill their graduation requirements. These changes allow students to take nine elective courses and reduce the prerequisite chain by one course. Impacted degrees include: BS and BA in Computer Science, BS in IT, and Computer Science Minor

### Summer 2018 - Summer 2018

Certification Course for Farelogix Employees, New courses developed or significantly revised,

Training, assessment, professional certificate

C++ Certification Course, Delivery of Executive or Professional Education,

The purpose of this course to provide you with intermediate-level knowledge of the C++ language. This includes its syntax and semantics, how to capitalize on its object-oriented structure to build useful and extensible software packages, writing efficient code, and proper software design methodologies.

### Spring 2018 - Ongoing

FIU Evaluating Teaching Project, Other Activities related to teaching innovations,

SCIS faculty representative

Department-specific teaching evaluation, Development of discipline-based practice tools,

Proposed and communicated SCIS teaching evaluation changes, arranged faculty meetings, liason for faculty with questions

### Spring 2017 - Ongoing

BA in Computer Science, New courses developed or significantly revised,

Work with UGC colleagues

New degree program, New course Development Approved by Col or Dept ,

The B.A in Computer Science (CS) is intended for students targeting a career in the computing field. The program provides a solid foundation in Computer Science blended with an interdisciplinary field of their choices such as Digital Media, Business, Economics and more and permits flexible elective courses to be taken outside of the discipline.

### Spring 2016 - Spring 2016

Replacing Domain-Specific Methods in Bioinformatics with Machine Learning Techniques, Portfolios,

External member of Ph.D. dissertation committee

Ph.D. Thesis, Thesis / Dissertation Committee - Member ,

Student: Ronald James Nowling; University of Notre Dame

### Spring 2016 - Ongoing

GPU Documentation, Use of technology and software,

CUDA tutorial that continues to be used in CDA-4101 at FIU.

CUDA Tutorial, Instructor's Manual ,

Supported by NVIDIA's GPU Educators Program, wrote documentation on how to use the GPU for faculty at Eckerd College and FIU

### Fall 2015 - Ongoing

Incremental Interactive Projects (IPs), Other Activities related to teaching innovations,

Repository

CDA hardware projects, Innovations in Course Content / Presentation ,

Incremental Interactive Projects are projects that involve a real-world application of the course material and iteratively change every semester. They start from an initial state, which students work on improving as a semester project. One submission will then be uploaded permanently to the repository, creating a new and improved state. This then becomes the initial state of a future semester. The idea is to develop a perception of how course concepts can evolve, and forward thinking.

NVIDIA GPU Educators, Use of technology and software,

Incorporated GPU into CDA4101 parallelism unit

GPU Computing, Existing Course - Compensated Redesign,

Received funding from NVIDIA to integrate GPU computing into the classroom

Plugin-Based Microbiome Analysis (PluMA), Undergraduate research projects,

Algorithm design, software engineering

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Cristina Alonso, Rob Panoff, Astrid Manuel, Alejandra Vasquez, Guillermo Barquero, Bhavyta Chauhan, Veronica Parra, Rishabh Vaidya, Cesia Bulnes, Roberto Hernandez, Amanda Martinez, Darren Ellsworth, Matthew Floyd, Wendy Palacios, Joseph Quinn, Mariana Picans, Nicholas Sanchez; FIU

Project: Develop and test new algorithms for analyzing microbiome data and implementing them as plugins for PluMA (<http://biorg.cs.fiu.edu/pluma>) in a programming language of choice. Upon completion plugins get added to PluMA's public plugin pool and are subsequently available to others in the microbiome research community.

Student Choice Interactive Project (IP), Other Activities related to teaching innovations,

For hardware course sequence

Capstone project, Innovations in Course Content / Presentation ,

The "student-choice" IP is conducted upon completion of a course sequence (i.e. computer hardware). It involves developing a topic, hands-on research, surveying of the literature, discovering a current void and developing a contribution (either an improvement or something brand new). To relate to my teaching philosophy, it is through this project that student move from perception to action, the "top" of the pyramid. The idea is that they achieve this upon "graduation" from a course sequence.

Physical Adder Construction, Active learning techniques,

Project for CDA3103/CDA3102

Hands-on learning, Innovations in Course Content / Presentation ,

Students construct a physical device that can add two values between zero and seven, using real silicon chips and copper wiring.

Learning Assistant Program, Active learning techniques,

Built and executed an assessment plan

LA Assessment, Assurance of Learning - Teaching,

### Summer 2015 - Summer 2015

Microbial Social Networks, Undergraduate research projects,

Metagenomics and network analysis

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Lawrence Irvin, Cameron Davis, Eli Peake; Eckerd College

Project: Perform social network analysis on a microbial ecological network, where edges indicate relationships (cooperation or competition) between members of a microbiome. Collaboration between Eckerd College and FIU. Funding granted through Eckerd College Natural Sciences Summer Research Program (NSSRP), funded by Howard Hughes Medical Institute

### Spring 2015 - Spring 2015

Moore's Law and Cryptographic Keys: A Case Study of Breaking RSA on the GPU, Undergraduate research projects,

Undergraduate thesis committee

Undergraduate Thesis, Student Assign-Supervised Thesis (UG Seniors) ,

Student: Galen Irving-Sachs; Eckerd College

### Fall 2014 - Spring 2015

GPU Biofilm Image Processing (GPUBIP), Undergraduate research projects,

Fractal analysis of biofilm images

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Kyle Kempton and Hugo Riggs\*; Eckerd College (\* Hugo is now an FIU graduate student)

Project: Capitalized on the benefit of the GPU to efficiently analyze multiple biofilm images simultaneously and determine fractal dimension. This can help determine useful properties of the biofilm, such as maturity or level of nutrition.

### Summer 2014 - Summer 2014

MDLab: A Framework for Prototyping Molecular Dynamics Simulations in Python on the GPU , Undergraduate research projects,

GPU molecular modeling

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Jonathan Bryant, Stephen Felman, Hugo Riggs\*; Eckerd College. (\* Hugo is currently an FIU graduate student)

Project: Explore options for parallelizing force calculations and image processing of biofilm data on the Graphics Processing Unit (GPU). Collaboration between Eckerd College, FIU, Notre Dame and Stanford. Funding granted through Eckerd College Natural Sciences Summer Research Program (NSSRP), funded by Howard Hughes Medical Institute

### Spring 2014 - Spring 2015

Mathematical Patterns in Nature, New courses developed or significantly revised,

New short term course

New course, New course Development Approved by Col or Dept ,

In this class we will be studying a universal language, mathematics. While we have all grown up studying how to perform mathematics, this course will mainly center upon how it is applied, particularly in the natural world that we observe everyday. In fact we will see in this course, independent of our mathematical abilities we are very mathematical beings, in more ways than we probably have even realized. Mathematics in the natural world is a topic that we are continuing to know more about on a daily basis. There is a lot more to discover even today.

### Fall 2013 - Fall 2013

GPU Computing in the Life Sciences, Undergraduate research projects,

Interdisciplinary computational science work

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Annie Rodgers; Eckerd College

Project: Write programs to run mathematical functions for use in molecular simulations in parallel using the Graphics Processing Unit (GPU). Collaboration between Eckerd College and Notre Dame. Funding available through the Freshman Research Associateship (FRA) program at Eckerd College

### Summer 2013 - Summer 2013

Vitamin-GPU: Multiple Levels of Modeling Natural Processes on the Graphics Processing Unit (GPU), Undergraduate research projects,

Simulation and modeling

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Tiffany Flor, Galen Irving-Sachs, Cameron Crowson, Philippe Novikov; Eckerd College

Project: Parallelize and improve the speed of multiple levels of biological modeling for the Graphics Processing Unit (GPU), including molecular, genetic and cell modeling. Collaboration between Eckerd College, FIU, Notre Dame and Stanford. Funding granted through Eckerd College Natural Sciences Summer Research Program (NSSRP), funded by Howard Hughes Medical Institute

### Fall 2012 - Spring 2015

Discipline Coordinator of Computer Science, Eckerd College, Course coordination,

Departmental leadership role

Curriculum Assessment, Program Assessment Projects ,

Managed curriculum and degree requirements, incorporating new coursework, assessment. Led the effort to build a three-year assessment report for SACS during the period 2012-2015, which outlines several key modifications to the computer science curriculum that are still in existence at Eckerd College.

### Fall 2012 - Spring 2013

Academy Prep Online Alumni Database, Service learning,

Computer Science Seminar

Online Alumni Database, Student Assign-Clinical/Practicum/Internship,

Led a service project for junior and senior computer science students at Eckerd College. Service project involved designing an online alumni database for Academy Prep Middle School in Tampa, FL.

### Summer 2012 - Summer 2012

GPU Parallelization of DePiCt, Undergraduate research projects,

GPU parallelism and primer design

REU, Student Assign-Supervised Research (UG) ,

Students: Phillippe Novikov and James Parda; Eckerd College

Project: Parallelize a known method for designing degenerate primers on the Graphics Processing Unit (GPU). These primers are used to amplify target regions of interest in DNA samples; degeneracy allows primers to have some uncertainty in their sequence data. Collaboration between Eckerd College and FIU. Funding granted through Eckerd College Natural Sciences Summer Research Program (NSSRP), funded by Howard Hughes Medical Institute

### Spring 2012 - Spring 2012

Narwhal: A case study Developing a Web Application for the Classroom Utilizing Behavior Driven Development, Undergraduate research projects,

Advisor for thesis project, chair of undergraduate thesis committee

Undergraduate Thesis (Advisor), Student Assign-Supervised Thesis (UG Seniors) ,

Student: Austin Broce Vance, Eckerd College

### Spring 2010 - Spring 2010

Nature-inspired Metaheuristics for Combinatorial Optimization Problems, Undergraduate research projects,

Undergraduate thesis committee

Undergraduate Thesis, Student Assign-Supervised Thesis (UG Seniors) ,



Student: Ronald James Nowling, Eckerd College

### Spring 2009 - Spring 2015

Biology and the Game of Life, New courses developed or significantly revised,

New natural science elective course

New course, New course Development Approved by Col or Dept ,

This course is designed to provide an appreciation of the natural sciences in everyday life. Material in this course will encapsulate a wide variety of the natural sciences, including mathematics, biology, chemistry and physics and involve a great deal of computer simulation. At its most basic level however, I consider this to be primarily a philosophy course. We will explore various theories about methods by which natural processes operate and evolve, which has implications as farreaching as the origins of the universe. The primary question we will explore will be: Does life itself follow a simple set of mathematical rules?

### Fall 2008 - Spring 2015

Eckerd College Coursework, Other Activities related to teaching innovations,

Assistant Professor of Computer Science, Eckerd College

Departmental and non-departmental courses, Classes taught outside of FIU,

Courses Instructed as an Assistant Professor at Eckerd College: Computer Architecture, Compilers, Data Structures, Introduction to Computer Science, Computer Networks, Programming Languages, Quest for Meaning, Survey of Computing, Western Heritage in a Global Context

### Summer 2007 - Summer 2010

MDInter: Interactive Molecular Dynamics, Undergraduate research projects,

Interactive interfaces to molecular dynamics simulations

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Dylan Brandtner and Chun Bong Benjamin Yau; Notre Dame, Kristofer McEwing; Eckerd College  
Project: Develop effective ways to run molecular simulations interactively; this culminated in the development and presentation of a graphical tool MDInter at the University of North Florida.

### Summer 2007 - Fall 2007

Notre Dame Coursework, Other Activities related to teaching innovations,

Graduate Instructor of Computer Science, Notre Dame

Advanced C++ Programming, Classes taught outside of FIU,

Served as Instructor for the Advanced C++ Programming course for the computer science department at University of Notre Dame.

### Summer 2006 - Summer 2006

BioLogo: A Domain-Specific Language for Morphogenesis, Undergraduate research projects,

Domain-specific language development

REU, Student Assign-Supervised Research (UG) ,

Students Supervised: Troy Raeder; Notre Dame  
Project: Develop an XML-based domain-specific programming language BioLogo that interfaces to the cell modeling software CompuCell3D.

### Funded Research/Grants

#### Completed

Research Program Projects and Centers, Funded by National Institute of Justice (August 1, 2017 - June 1, 2019) (**\$12,000.00**), Completed, Summer 2019, PI Bruce McCord with CoInvestigator Trevor Cickovski, CoInvestigator Giri Narasimhan, CoPI Kuppappreddi Balamurugan [Activity Considered Community Engagement/Community-Engaged Scholarship?: No] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: Federal] [Type of Grant: Research]

Data Intensive Academic Grid (DIAG, Equipment), Funded by University of Maryland (January 11, 2016), awarded March 18,

2016, Completed, Spring 2016, PI Trevor Cickovski with CoPI Giri Narasimhan [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: University / College] [Type of Grant: Equipment]

National Sciences Summer Research Program, Funded by Howard Hughes Medical Institute (June 4, 2012 - August 1, 2015), awarded March 15, 2012 (**\$29,050.00**), Completed, Summer 2012, PI Trevor Cickovski [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: Internal] [Type of Funding: University / College] [Type of Grant: Research]

Faculty Development Grant, Funded by Eckerd College (August 3, 2009 - August 1, 2015), awarded August 1, 2009 (**\$10,800.00**), Completed, Spring 2010, PI Trevor Cickovski [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: Internal] [Type of Funding: University / College] [Type of Grant: Internal]

#### **Funded - In Progress**

Bioinformatic Search for Epitope-based Molecular Mimicry in the SARS-CoV-2 Virus Using Chameleon, Funded by National Science Foundation (July 1, 2020), awarded June 8, 2020 (**\$199,000.00**), Funded - In Progress, Summer 2020, PI Giri Narasimhan with CoPI Charles Dimitroff, CoPI Prem Champaign, CoPI Jessica Liberles, CoPI Ananda Mondal, CoInvestigator Kalai Mathee, CoInvestigator Trevor Cickovski, CoInvestigator Jason Liu [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: Federal] [Type of Grant: Research]

An Epigenetic multiplex amplification for the determination of age and body fluid type, Funded by U.S. Department of Justice (January 1, 2018 - December 31, 2020) (**\$368,512.00**), Funded - In Progress, Spring 2018, CoPI Giri Narasimhan (0%) with PI Bruce Mc Cord (0%), Key Personnel Trevor Cickovski (0%) [Activity Considered Community Engagement/Community-Engaged Scholarship?: No] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: Federal] [Type of Grant: Research]

Florida IT Pathways to Success (FLIT-Path), Funded by National Science Foundation (January 9, 2017 - January 9, 2022), awarded September 16, 2016 (**\$1,940,000.00**), Funded - In Progress, Spring 2017, CoInvestigator Trevor Cickovski with CoInvestigator Patricia McDermott-Wells, CoInvestigator Michael Robinson, CoInvestigator Debra Davis, PI Mark Weiss, CoPI Zahra Hazari, CoInvestigator Antonio Bajuelos Dominguez [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: Yes] [Internal/External: External] [Type of Funding: Federal] [Type of Grant: Program]

CUDA Teaching Center Program, Funded by NVIDIA (September 2, 2013), awarded April 24, 2013 (**\$2,000.00**), Funded - In Progress, Spring 2013, PI Trevor Cickovski [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: Institutional] [Type of Grant: Training]

#### **Submitted for Review**

Dynamic Bayesian Networks for Modeling Oral and Lung Microbiome, Funded by National Institute of Health (July 1, 2019), awarded October 4, 2019 (**\$556,827.00**), Submitted for Review, Fall 2019, PI Giri Narasimhan with CoPI Trevor Cickovski, CoPI Kalai Mathee, PI Ziv Bar-Joseph, CoPI Namasivayam Ambalavanan [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: Government] [Type of Grant: Research]

CyberMUM: Cyberinfrastructure for Monitoring Urban Microbiomes, Funded by National Institute of Health (July 1, 2020), awarded June 19, 2020 (**\$50,000.00**), In Preparation - Not Submitted, Fall 2020, PI Kalai Mathee with CoPI Trevor Cickovski, CoPI Giri Narasimhan, CoPI Ananda Mondal, CoPI Sukumar Ganapati, CoPI Prem Chapagain, CoPI Jessica Liberles, CoPI David Brown, CoPI Raimundo Rodolfo, CoPI Rita Colwell, CoPI Manoj Dadlani [Activity Considered Community Engagement/Community-Engaged Scholarship?: Yes] [Approval for Pre-award Spending: No] [Internal/External: External] [Type of Funding: Federal] [Type of Grant: Research]

Professional Honors, Prizes, Fellowships

#### **Fall 2001**

Tau Beta Pi, 2001, Tau Beta Pi

#### **Fall 2002**

Arthur J. Schmitt Graduate Fellowship, 2002, University of Notre Dame

#### **Spring 2004**

Upsilon Pi Epsilon, 2004, Association for Computing Machinery (ACM)

#### **Spring 2006**

Kaneb Award For Excellence In Teaching, 2006, University of Notre Dame

**Summer 2012**

OpenMM Visiting Scholars Program, 2012, Stanford University

**Spring 2014**

Tenure and Promotion to Associate Professor, 2014, Eckerd College

**Spring 2015**

Hexennial Leave, 2015, Eckerd College

**Fall 2017**

Excellence In Teaching (SCIS), 2017, Florida International University

**Spring 2019**

Faculty Teaching Award (College of Engineering), 2019, Florida International University

Center for Advancement of Teaching (CAT) Fellow, 2019, Florida International University

**Summer 2020**

Graduate Faculty, 2020, Florida International University

Professional Licensure and Certification

Remote Teach Ready Badge, 2020, Florida, RTR1, Florida International University

University Committees

**University**

**Fall 2018 - Ongoing**

Evaluating Teaching, (Office Of The Provost) [Activity Considered Community Engagement/Community-Engaged  
Scholarship?: Yes] [Level of Service: College/School]

Other Institutional Service

**Fall 2020 - Ongoing**

Subject Area Coordinator (Computer Organization), (Computer Info Sciences)

**Summer 2020 - Summer 2020**

Lead Judge (Posters), FSTAR Symposium, (Academic Health Center)

**Fall 2018 - Spring 2019**

Annual Awards Committee, (Computer Info Sciences)

**Fall 2017 - Ongoing**

Instructor Hiring Committee (IHC), (Computer Info Sciences)

**Fall 2016 - Spring 2020**

UnderGraduate Program Committee (UGC), (Computer Info Sciences)

External Service

**Fall 2020 - Ongoing**

Reviewer, Oxford University Press

**Summer 2020 - Ongoing**

Reviewer, ACM

**Spring 2019 - Summer 2019**

Reviewer, Marquette University

**Fall 2018 - Summer 2019**

Reviewer, Springer

**Spring 2018 - Spring 2018**

Reviewer, Springer

**Spring 2017 - Spring 2017**

Reviewer, Wiley

**Spring 2015 - Spring 2017**

Reviewer, Wiley

**Fall 2013 - Spring 2014**

Graduate Fellowship Advisor, Eckerd College

**Fall 2011 - Spring 2013**

Admissions and Scholarships, Eckerd College

**Fall 2011 - Spring 2012**

Faculty Observer to the Board of Trustees, Eckerd College

**Fall 2009 - Spring 2010**

Africa Initiative, Eckerd College

**Fall 2009 - Spring 2011**

Computer Policy Group, Eckerd College

Student Supervision/Mentoring

**Fall 2019 - Summer 2020**

Roberto Hernandez, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

**Fall 2019 - Spring 2020**

Darren Ellsworth, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

Amanda Martinez, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

Mark Fajet, Computing and Information Sciences, Trevor Cickovski, FIU, CIS 5900, Independent Study

**Spring 2020 - Spring 2020**

Matthew Floyd, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

**Spring 2019 - Summer 2019**

Veronica Parra, Computer Science, Trevor Cickovski, FIU, REU

Rishabh Vaidya, Computer Science, Trevor Cickovski, FIU, Senior Project

Bhavvta Chauhan, Computer Science, Trevor Cickovski, FIU, Senior Project

Cesia Bulnes, Computer Science, Trevor Cickovski, FIU, Senior Project

**Fall 2018 - Spring 2019**

Guillermo Barquero, Computer Science, Trevor Cickovski, FIU, REU

Alejandra Vasquez, Computer Science, Trevor Cickovski, FIU, REU

**Spring 2017 - Spring 2018**

Astrid Manuel, Bioinformatics, Trevor Cickovski/Giri Narasimhan, FIU, REU

**Spring 2016 - Spring 2017**

Cristina Alonso, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

**Spring 2017 - Spring 2017**

Rob Panoff, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

**Spring 2016 - Spring 2016**

RJ Nowling, Computer Science and Engineering, Scott Emrich/Jesus Izaguirre, University of Notre Dame, Ph.D. Thesis  
Committee External Member

**Summer 2015 - Summer 2015**

Cameron Davis, Computer Science, Trevor Cickovski, Eckerd College, REU

Eli Peake, Computer Science, Trevor Cickovski, Eckerd College, REU

Lawrence Irvin, Computer Science, Trevor Cickovski, Eckerd College, REU

**Fall 2014 - Spring 2015**

Galen Irving-Sachs, Computer Science, Holger Mauch, Eckerd College, Senior Thesis

**Summer 2014 - Spring 2015**

Hugo Riggs, Computer Science, Trevor Cickovski, Eckerd College, REU

**Fall 2014 - Fall 2014**

Kyle Kempton, Computer Science, Trevor Cickovski, Eckerd College, REU

**Summer 2014 - Summer 2014**

Stephen Felman, Computer Science, Trevor Cickovski, Eckerd College, REU

**Fall 2013 - Spring 2014**

Annie Rodgers, Chemistry, Trevor Cickovski, Eckerd College, REU

**Summer 2012 - Summer 2013**

Philip Novikov, Computer Science, Trevor Cickovski, Eckerd College, REU

**Summer 2013 - Summer 2013**

Galen Irving-Sachs, Computer Science, Trevor Cickovski, Eckerd College, REU

Tiffany Flor, Computer Science, Trevor Cickovski, Eckerd College, REU

**Summer 2012 - Summer 2012**

James Parda, Computer Science, Trevor Cickovski, Eckerd College, REU

**Fall 2010 - Spring 2012**

Austin Vance, Computer Science, Trevor Cickovski, Eckerd College, Senior Thesis

**Spring 2010 - Spring 2010**

Kristofer McEwing, Computer Science, Trevor Cickovski, Eckerd College, REU

**Fall 2009 - Spring 2010**

RJ Nowling, Computer Science, Holger Mauch, Eckerd College, Senior Thesis

**Fall 2020 - Ongoing**

Reiner Gonzalez, Computer Science, Trevor Cickovski, FIU, Senior Project

Amanda Fernandez, Computer Science, Trevor Cickovski, FIU, Senior Project

Caitlin Brown, Computer Science, Trevor Cickovski, FIU, Senior Project

Karol Phung, Computer Science, Trevor Cickovski, FIU, Senior Project

Javier Pena, Computer Science, Trevor Cickovski, FIU, Senior Project

Anica Matos, Computer Science, Trevor Cickovski, FIU, Senior Project

Maheer Ahmed, Computer Science, Trevor Cickovski, FIU, Senior Project

Christian Dau, Computer Science, Trevor Cickovski, FIU, Senior Project

Rebecca Dupuis, Computer Science, Trevor Cickovski, FIU, Senior Project

Edward Palermo, Computer Science, Trevor Cickovski, FIU, Senior Project

Zachary Schreiner, Computer Science, Trevor Cickovski, FIU, REU

Adriel Camargo, Computer Science, Trevor Cickovski, FIU, Senior Project

#### **Spring 2018 - Ongoing**

Various Students, CS/IT (Flit-Path), Trevor Cickovski, FIU, Flit-Path

#### **Summer 2020 - Ongoing**

Scot Connor, Medicine, Trevor Cickovski/Kalai Mathee, FIU, Summer Research

Fantaysia Polanco, Pre-Med, Trevor Cickovski/Kalai Mathee, FIU, Summer Research

Eric Nayman, Medicine, Trevor Cickovski/Kalai Mathee, FIU, Summer Research

Patience Paul, Medicine, Trevor Cickovski/Kalai Mathee, FIU, Summer Research

Mariana Picans, Computer Science, Trevor Cickovski, FIU, REU

Nicholas Sanchez, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

#### **Spring 2020 - Ongoing**

Joseph Quinn, Computer Science, Trevor Cickovski, FIU, REU

Wendy Palacios, Computer Science, Trevor Cickovski/Giri Narasimhan, FIU, REU

#### Offices Held in Professional Societies

##### **2007 - Ongoing**

Institute of Electrical and Electronics Engineers

##### **2007 - 2018**

Association for Computing Machinery, 2018

American Association of University Professors, 2018

#### Consulting

##### **Spring 2019 - Spring 2020**

Cygned Inc., 175 hours

#### Professional Development

##### **Summer 2020 - Summer 2020**

Panthers Protecting Panthers: COVID-19 Safety, Miami, Florida, 2 hours

##### **Spring 2020 - Spring 2020**

Florida Atlantic University (FAU) Regional Learning Assistant (LA) Workshop, Boca Raton, Florida, 16 hours

Collaborative Institutional Training Initiative (CITI) Certification, Miami, Florida, 3 hours

Remote Learning with Learning Assistants (LAs) Workshop Series, Miami, Florida, 10 hours

NSF Proposal Writing Workshop, Miami, Florida, 10 hours

##### **Spring 2019 - Spring 2019**

Kognito's At-Risk for Faculty & Staff, Miami, Florida, 1 hours

##### **Fall 2018 - Fall 2019**

Strategies and Tactics for Recruitment to Increase Diversity and Excellence (STRIDE) Hiring/Faculty Recruitment Workshop, Miami, Florida, 3 hours

##### **Spring 2018 - Ongoing**

FIU-108 Access to Student Education Records (FERPA), Miami, Florida, 3 hours

##### **Spring 2018 - Spring 2018**

Personal Empowerment Series for Faculty, Miami, Florida, 6 hours

**Spring 2017 - Spring 2017**

ACM Special Interest Group on Computer Science Education 48th Technical Symposium (SIGCSE'17) , Seattle, Washington, 24 hours

**Spring 2016 - Spring 2016**

CAT Reading Group: "The Growth Mindset", Miami, Florida, 6 hours

**Fall 2015 - Ongoing**

Various Discipline-Based Education Research (DBER) Seminars, Miami, Florida, 10 hours

Engagement Activities

**Spring 2020 - Spring 2020**

Guest Lecturers/Presenters, Learning Assistant (LA) Workshop, Miami, Florida, USA, 2 hours, Cristy Charters, Trevor Cickovski and Debra Davis, Florida International University, Lead a workshop informing SCIS faculty about the process for hiring Learning Assistants and ideas for using them effectively in the classroom, Student learning, active learning, student engagement

**Spring 2017 - Ongoing**

Guest Lecturers/Presenters, Python Workshop, Miami, Florida, USA, 9 hours (3 x 3 hour sessions), Upsilon Pi Epsilon, Florida International University, Lead a workshop in the language Python, open to FIU students and the public, Community formation, sharing of knowledge