

# Curriculum Vitae

*for*  
*Ali M. Elgindi*

## ***Personal Information:***

Birth date: June 2<sup>nd</sup>, 1984  
Citizenship: USA  
Address: Department of Mathematics  
College of Science  
Alfaisal University  
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## ***Languages Spoken:***

English (Native)  
Arabic (Fluent)

## ***Education:***

***Ph.D.:*** University of Chicago  
Chicago, Illinois, USA  
Department of Mathematics  
Awarded: June 2011

***B.S./M.S.:*** Michigan State University  
East Lansing, Michigan, USA  
Mathematics major, Physics minor  
Awarded: August 2004      GPA: 3.98

## ***Doctorial Research:***

Real submanifolds of complex space, complex tangents  
Thesis Title: **“On the Topological Structure of Complex Tangencies of Embeddings of  $S^3$  into  $C^3$ ”**  
Thesis Advisor: Professor Sidney Webster

## ***Research Interests:***

Embeddings of Real Manifolds into Complex Space  
Low Dimensional Topology  
Contact Topology  
Applications of Geometry and Topology to Physical Cosmology

## ***Work Experience:***

Assistant Professor, Alfaisal University, Riyadh, KSA  
September 2012 – present  
Deputy Head, Department of Mathematics  
June 2013 - present.

Research Assistant, University of Chicago, USA  
June 2010 - June 2011.  
Lecturer, University of Chicago, USA  
June 2006 - June 2010.

Teacher Assistant, Michigan State University, USA  
September 2001 - June 2004.

## ***Teaching Experience:***

As an Assistant Professor at Alfaisal University, I taught Pre-calculus, Calculus I, II, and III, Business Calculus, Linear Algebra, Probability and Statistics, and Complex Analysis.

I was also a Lecturer at University of Chicago for four years. I taught the Calculus sequence and Linear Algebra.

I was also a Teacher Assistant at Michigan State University for three years. I worked with students in Elementary Algebra, Pre-calculus, and Calculus classes.

## ***Grants:***

1. Alfaisal University Internal Research Grant  
Title: “**Complex Tangents to Real-Submanifolds of Complex Space**”  
Awarded: December 15<sup>th</sup>, 2013  
Amount: 50,000 SAR

### ***Publications List:***

1. **“Totally Real Perturbations and Nondegenerate Embeddings of  $S^3$ ,”** New York Journal of Mathematics, Vol. 21 (2015), 1283-1293.
2. **“A Topological Obstruction to the Removal of a Degenerate Complex Tangent and Some Related Homotopy and Homology Groups,”** International Journal of Mathematics, Vol. 26, No. 3 (2015), Article No. 1550025.
3. **“Complex Tangencies to Embeddings of Heisenberg Groups and Odd-dimensional Spheres,”** International Journal of Mathematics, Vol. 25, No. 3 (2014), Article No. 1450028.
4. **“Bishop Invariants for Embeddings of  $S^3$  into  $C^3$ ,”** New York Journal of Mathematics, Vol. 20 (2014), 275-292.
5. **“On the Topological Structure of Complex Tangencies to Embeddings of  $S^3$  into  $C^3$ ,”** New York Journal of Mathematics, Vol. 18 (2012), 295-313.
6. An Approximation of the Bishop Invariant for 3-Manifolds.  
[in preparation]
7. Constructions of Contact Structures on 3-manifolds Embedded in Complex Space.  
[in preparation]

### ***Conferences Attended:***

1. **“Analysis and Geometry in Several Complex Variables,”** Texas A&M University at Qatar. January 4–8, 2015.
2. **“Conference on Partial Differential Equations in Complex Geometry and Singular Spaces,”** American University of Beirut. Nov. 24–27, 2014.

### ***Invited Speaker:***

**“Complex Tangents to Embeddings of 3-manifolds into  $C^3$ ,”** University of Ljubljana. March 24<sup>th</sup>, 2015.

Part of Seminar Series in Complex Analysis.

Invited by: Professor Franc Forstneric.

## ***Academic Extracurricular Activities:***

1. Co-Head of Development for Master of Science program in Applied Mathematics at Alfaisal University.  
Development began September, 2013.
2. Lead Coordinator and Developer of “Minor in Mathematics for Engineers” program at Alfaisal University. Courses developed: Advanced Calculus, Complex Analysis, and Partial Differential Equations.  
Development during academic year 2012-2013.  
Implementation in beginning of Fall 2013 semester.
3. Research Assistant. Booth School of Business, University of Chicago.  
Mathematical Modeling of Social Networks.  
Advisor: Matthew Bothner, 9/08-3/09.
4. Attended: Lecture Series on Mathematics of Finance, given by Professor Roger Lee, University of Chicago. Topic: Options Pricing.  
9/05-12/05.
5. Research Assistant. Department of Mathematics, Michigan State University. 4-dimensional manifolds and Symplectic topology.  
Advisor: Professor Ronald Fintushel, 1/03-12/03.
6. Research Assistant. Department of Physiology, Michigan State University.  
Topological and Geometric Aspects of Biochemical Reactions in the Human Body.  
Advisor: Professor Robert Root-Bernstein, 9/01-12/01.
7. Attended: Institute for Advanced Study/Park City Mathematics Institute Summer Program 2001 for Undergraduates on Algebraic Geometry and Applications to Quantum Physics.  
Mentor: Professor Sheldon Katz (currently at University of Illinois) July 9-July 28, 2001.
8. Research Assistant. Department of Chemistry, University of Wisconsin- Eau Claire. Numerical and theoretical computation of singular integrals arising from physical chemistry.  
Problem worked on: velocity of electrons in Lithium atom.  
Advisor: Professor Fred King, 8/00-5/01.

## ***Awards:***

1. College Fellowship. University of Chicago. Awarded Sept. 2004.
2. Cole Award Winner. Michigan State University Honors College.  
Awarded June, 2002.
3. Natural Sciences Scholarship. Michigan State University. Awarded August 2002.
4. Phillips Memorial Scholarship. Department of Mathematics, Michigan State University. Awarded January, 2002.