

ANTHONY LEE DELLINGER, Ph.D.

2901 E. Gate City Blvd. ♦ Greensboro, NC 27401 ♦ Mobile: 336-217-5163 ♦
adellinger@kepleybiosystems.com

EDUCATION

- Ph.D. **Joint School of Nanoscience and Nanoengineering**, Greensboro, NC, Nanoscience, Summa Cum Laude, GPA: 3.96, 2014
- B.S. **Virginia Commonwealth University**, Richmond, VA, Forensic Molecular Biology, Magna Cum Laude, GPA: 3.67, 2006
- A.S. **Northern Virginia Community College**, Manassas, VA, Biology, Summa Cum Laude, GPA: 3.92, 2004

ACADEMIC AND INDUSTRY POSITIONS HELD

- 2015-present Adjunct Research Professor, Joint School of Nanoscience & Nanoengineering (JSNN), Greensboro, NC.
- 2013-2015 Adjunct Research Professor, Danville Community College (DCC), Danville, VA.
- 2013-present President and Founding Member of Kepley Biosystems Incorporated.
- 2010-present Graduate Student, Department of Nanoscience, JSNN, Greensboro, NC.
- 2010-present Consultant, Luna Innovations Incorporated, Danville, VA.
- 2007-2010 Lead Researcher, Nanobiology, Luna Innovations Incorporated, Danville, VA.
- 2006-2007 Research Assistant, Division of Rheumatology, Allergy and Immunology, Medical College of Virginia, Richmond, VA.
- 2005-2006 Laboratory Technician, Department of Genetics, VCU, Richmond, VA.

PROFESSIONAL AWARDS AND RECOGNITIONS

* List does not include simple peer-reviewed poster/abstract presentations (non-oral) at meetings which have averaged at least two/year since 2007.

- Phi Theta Kappa National Honor Society, Inducted 2003.
- Dean's List, 2002 – 2006.
- Dean's Scholarship for Outstanding Academic Success, 2004 – 2006.
- American Academy of Forensic Science, Young Researcher Award and Travel Grant 2006.

- All Innovator Award at Luna Innovations 2007 awarded to an outstanding employee yearly.
- Invited Speaker and Travel Grant Award Winner, American Academy of Immunology 2010.
- Lula Martin McIver Scholarship, 2013-2014.
- UNCG Inclusiveness Award, 2012-2014.
- UNCG Summer Research Award, 2014
- Invited Speaker and Travel Grant Award Winner, American Academy of Immunologists 2014.
- Capital Connects, Greensboro Triad Pitch Night Winner of the People’s Choice Award for Innovation, 2013.
- Finalist in UNCG’s 3MT, 3 Minute Thesis Competition.
- NSF Phase 1 SBIR Grant, Creating a Sustainable Bait Solution, \$150,000, 2015
- North Carolina One Science, Technology and Innovation Grant, \$50,000, 2015
- Inaugural Winner of UNCG’s Student Entrepreneur of the Year Award, 2015

MENTORING/TEACHING

Graduate Committees:

- Ashley Turner, Ph.D. Candidate Joint School of Nanoscience and Nanoengineering.
- Bryce Duncan, Ph.D. Candidate Joint School of Nanoscience and Nanoengineering.
- Jesse Plotkin, Ph.D. Candidate Joint School of Nanoscience and Nanoengineering.

Current and past trainees:

- Mentored two National Science Foundation-sponsored, Science, Technology, Engineering, and Math (STEM) curriculum for high school teachers while at Luna Innovations.
 - Giles Johnson, Virginia Commonwealth University (2010), spent 6 months in a lab rotation assisting with functionalized fullerenes for ELISA assays.
 - Christopher Hill, University of Virginia (2009), spent 1 year in lab rotation investigating the effects of fullerenes on atherosclerosis.
- Mentored four students from Forsyth Technical Community College (FTCC) to expose emerging community college students to the advanced technology at JSNN.
 - Roger English, FTCC. Learned Flow cytometry, primary cell isolation, and tissue culture techniques as a joint project between FTCC to help prepare community college graduates for the job force.
 - Greg Walker, FTCC. Spent six months (2012) in laboratory learning tissue culture, Western blotting, and enzyme assays for Internship “Examining the effects of fullerenes as anti-inflammatories”.
 - Lisa Brothers, FTCC. Spent six months (2012) in laboratory learning tissue culture, anti-oxidant assays, and enzyme assays for Internship “Examining the effects of fullerene anti-oxidants for cosmetics”.

- Stephen Crawford, FTCC (2011), spent six months in lab rotation learning tissue culture, enzyme assays, and various equipment functions.
- Mentored one student from Danville Community College (DCC) to expose emerging community college students to the advanced technology at JSNN.
 - Lee Robertson, DCC (2014), ongoing lab rotation learning tissue culture, enzyme assays, and various equipment functions.
- Mentored one student from the University of Virginia to bridge academic experience to research experience prior to application to medical school.
 - Lee Graves, University of Virginia spent summer and fall semester of 2015 researching fullerenes capabilities to inhibit cholesterol uptake in macrophage cells. Methods and machines learned: tissue culture, PCR, ELISA, and nanomaterial characterization.
- Mentored one student from the University of North Carolina, Chapel Hill to expose emerging undergraduate students to advanced degrees in science.
 - John Cruickshank, University of North Carolina at Chapel Hill, Spent summer and winter semesters (2012, 2013, and 2014) in laboratory learning tissue culture, Western blotting, and enzyme assays for Internship “Examining the effects of fullerenes as anti-inflammatories”.
- Mentored one student from University of North Carolina, Greensboro, Semiconductor Research Corporation, Undergraduate Research Opportunity, Summer Internship Program (10 weeks, 2013).
 - Jonah Nikouyeh, UNCG, 2013. Spent 10 weeks in the lab determining structure/activity relationships using novel endofullerenes for MRI. He was invited to attend Techcon 2013 to present this project in Austin, Texas on September 9-11.
- Mentored one student from University of North Carolina, Greensboro, Semiconductor Research Corporation, Undergraduate Research Opportunity, Summer Internship Program (10 weeks, 2013).
 - Bianca Whitehead, North Carolina A and T State University, 2014. Spent 10 weeks in the lab researching the utility of fullerenes as a mechanism to extend the life span of fresh cut flowers. She was invited to attend Techcon 2014 to present this project in Austin, Texas on September 7-9.
- Current and Past Trainees-high school
 - Alex Hasler, spent six months (2012) in laboratory learning tissue culture, Western blotting, and enzyme assays for Gilford High School senior project “Examining the effects of various herbs on cancer cell growth”.

Guest Lectures:

- **NAN 750** Nanomedicine. Guest Lecturer, Nanobiology, 2015-present, University of North Carolina Greensboro.
- **NAN 205** Developer and Instructor. Measurement and Characterization of Nanomaterials. 2014, Danville Community College.
- **NAN 770** Scientific Integrity, Guest Lecturer, 2014-present, University of North Carolina Greensboro.
- **NAN 611** Instructor, Nanobiology Laboratory Rotation, 2010-present, student rating of class 100%, 2010-present, University of North Carolina Greensboro.
- Oversaw research project for UNCG undergraduate students (approximately 10) examining the ability of fullerenes to increase age span in mice.

UNIVERSITY SERVICE

- Luna Nanoworks. Worked on laboratory experiments for numerous NIH based research grants, 2010-present.
- Engineered Boipharmaceuticals. Worked on laboratory experiments for nano-based pharmaceutical products, 2012-2014.
- Syngenta. Worked on laboratory experiments for new pesticide related products, 2013-2014
- December 2010-present. Nanobiosciences Laboratory Manager
 - ✓ Oversee all students, personnel, and faculty using the nanobioscience laboratory.
 - ✓ In charge of ensuring all personnel are properly trained in all aspects of biological and chemical handling.
- Immunohistochemistry training. 2010-present. Trained NC A&T faculty and graduate students on sample preparation, slide embedding and cutting, histochemistry, and immunohistochemistry techniques.

COMMUNITY OUTREACH & SERVICE

- Performed demonstrations for NC Science Festival for elementary, middle, and school students and teachers. 2012-2014, Greensboro, NC.
- Girls in Science and Technology (GIST) Presenter for NC Science Festival. 2013-2014, Greensboro, NC.
- Galileo High School, Danville VA. “Pharmaceutical applications of fullerene derivatives; special emphasis on signal transduction pathways”, October 2013.
- Demonstrated various laboratory techniques for a Northwest high school group of students (Greensboro). March, 2013.
- Gave demonstrations to students for the NC Science Festival, 2012. Resulted in video tape presentation for student who presented results in Raleigh.
- Presented seminar “Developing fullerenes for pharmaceutical applications” to the North Carolina Association for Biomedical Research Nanobiotechnology teacher workshop. This is a Guilford County continuing education workshop for high school teachers, Greensboro, NC, November 2, 2012.

- Started new company at Gateway called Kepley BioSystems, Inc. The company will employ JSNN students and provide solutions in the healthcare, environmental, and personal care markets.
- Two presentations given to high school teachers and students visiting JSNN, June 2011.
- Continual NanoDays presentations representing Luna (2007-2010). Performed various hands-on demonstrations relevant to nanotechnology and nanomedicine.
- Science Museum of Virginia; “Nanomedicine” given in conjunction with “Nano-days”.

INVENTION DISCLOSURES-UNCG

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| 2013 | Autologous method for wound healing |
| 2012 | Novel Paradigm Changing Finger-Stick Approach Point of Care Analytic Reliability |
| 2011 | Compositions and methods for treating mast cell mediated diseases: A novel way to increase the efficacy of steroids in steroid resistant asthma |

US & INTERNATIONAL PATENTS FILED

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| 2014 | Synthetic baiting device for attracting crustaceans through slow release of attractants. |
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PEER REVIEWED PUBLICATIONS (19 to date)

1. Dellinger A and Kepley C. **Study examining fullerene toxicity raises questions as to the purity of the nanomaterials and erroneous experimental conclusions.** Toxicol. Sci. June 2014.
2. Dellinger A, Zhou Z, Kepley C. **A New Steroid-Mimicking Nanomaterial that Mediates Inhibition of Human Lung Mast Cells Responses.** Nanomedicine, February 2014.
3. Dellinger A, Nigrovic P, Duncan B, Turner A, Lee D, Kung A, Zhou Z, Kepley C. **Inhibition of Inflammatory Arthritis using Fullerene Nanomaterials.** PLOS One, accepted pending revisions, 2014.
4. Wang J, Ameri S, Fishgal N, Dwyer D, Dellinger A, Kepley C, Gurish M, and Nigrovic P. **The IL-33/ST2 axis supports mast cell survival via BCLXL.** PNAS, accepted June 14, 2014.
5. **Human Skin Mast Cells Express Complement Factors C3 and C5.** Fukuoka Y, Hite MR, Dellinger A, and Schwartz LB. J. Immunol. July 2013.
6. **Application of Fullerenes in Nanomedicine: An Update.** Dellinger A, Zhou Z, Connor J, Madhankumar AB, Pamujula S, Sayes CM, Kepley C. Nanomedicine. July 2014.
7. **A Novel Gadolinium-Based Trimetasphere® Metallofullerene for Application as an MRI Contrast Agent.** Adisheshaiah P, Dellinger A, MacFarland D, Stern S, Dobrovolskaia M, Ileva L, Clogston J, Patri A, Bernardo M, Zhou Z, McNeil S, and Kepley C. Investigative Radiology. March 2013.

8. **Effects of Novel Nanomaterials on Allergic Mediator Release from Human Mast Cells and Basophils through Non-IgE Mediated Pathways.** Dellinger A, Brooks DB, Plunkett B, Vonakis B, Sandros M, Zhou Z, and Kepley C. *J Nanomed Nanotech.* Mar 2013; 3:153.
9. **Detection of Atherosclerotic Plaque by Magnetic Resonance Imaging using Biomarker-Targeting Contrast Agents.** Dellinger A, Olson J, Zhou Z, Link K, Vance S, Sandros M, Yang J, Kepley C. *J. Cardiovascular Magnetic Resonance.* 16 Jan 2013; 15:7. *Article has now achieved “Highly Accessed” status relative to age (>1,000 downloads within three months): <http://www.biomedcentral.com/about/mostviewed>.
10. **Epoxyeicosatrienoic Acids are Involved in the C70 Fullerene Derivative Induced Control of Allergic Asthma.** Norton SK, Wijesinghe D, Dellinger A, Sturgill J, Zhou Z, Barbour S, Chalfant C, Conrad DH, Kepley C. *J. Allergy Clin. Immunol.* 2012 Sep;130(3):761-769.
11. **Molecular Interactions of Fullerene Derivatives in Human Serum and Inflammatory Cells.** Dellinger A, Zhou Z, MacFarland D, Sandros M, Sawafta A, Qabja G, and Kepley C. *Inscience: Nanotechnology* 2011; 1 (3):102-14.
12. **A Potential New Target for Asthma Therapy: A Disintegrin and Metalloprotease 10 (ADAM10) Involvement in Murine Experimental Asthma.** Mathews JA, Ford J, Norton S, Kang D, Dellinger A, Gibb DR, Ford AQ, Massay H, Kepley CL, Scherle P, Keegan AD, Conrad DH. *Allergy* 2011; 66:1193-200.
13. **A New Class of Human Mast Cell and Peripheral Blood Basophil Stabilizers Which Differentially Control Allergic Mediator Release.** Dellinger A, Norton SK, Zhou Z, Lenk R, MacFarland D, Vonakis B, Conrad D, and Kepley C. *Clin and Transl Sci* 2010; 2:158-69.
14. **A Novel Class of Compounds with Cutaneous Wound Healing Properties.** Zhou Z, Joslin S, Dellinger A, Ehrich M, Brooks B, Ren Q, Rodeck U, Lenk R, and Kepley C. *J Biomed Nanotechnol* 2010; 6:605-11.
15. **Liposomal Formulation of Amphiphilic Fullerene Antioxidants.** Zhou Z, Lenk R, Dellinger A, MacFarland D, Kumar K, Wilson SR, Kepley CL. *Bioconjug Chem* 2010;21:1656-61.
16. **Uptake and Distribution of Fullerenes in Human Mast Cells.** Dellinger A, Zhou Z, Norton SK, Lenk R, Conrad D, Kepley C. *Nanomedicine : the official journal of the American Academy of Nanomedicine.* February 2010; 6:575-82.
17. **Fullerene Nanomaterials Potentiate Hair Growth.** Zhou Z, Lenk R, Dellinger A, MacFarland D, Kumar K, Wilson SR, Kepley CL. *Nanomedicine.* 2009 Jun;5(2):202-7.
18. **Fullerene Nanomaterials Inhibit Phorbol Myristate Acetate-Induced Inflammation.** Dellinger A, Zhou Z, Lenk R, MacFarland D, Kepley CL. *Exp Dermatol.* 2009 Dec 18;(12):1079-81.
19. **Generation of Anaphylatoxins by Human Beta-Tryptase from C3, C4, and C5.** Fukuoka Y, Xia HZ, Sanchez-Muñoz LB, Dellinger A, Escribano L, Schwartz LB. *J Immunol.* 2008 May 1;180(9):6307-16.

BOOK CHAPTERS

Anthony Dellinger, Zhiguo Zhou, James Connor, A.B. Madhankumar, Sarala Pamujula, and Kepley, CL. *Fullerenes in nanomedicine: 2014*

HIGHLIGHTED RESEARCH

Fullerene nanoparticles ameliorate disease in arthritis mouse model. João H. Duarte. *Nature Reviews Rheumatology* 11, 319 (2015).

PRESENTATIONS

- Young Researcher Speaker, **Effects of Native Allele Spectra on Profile Matching** at the American Academy of Forensic Science in Seattle, WA, February 2006.
- Poster Presentation, **Fullerene-Based Nanomaterials Inhibit Atherosclerotic Foam Cell Formation** at the American Society for Nanomedicine in Rockville, MD, September 2008.
- Poster Presentation, **A Novel Nanomedicine Platform for Controlling Mast Cell Activation** at the American Association of Immunologist in Seattle, WA, May 2008
- Speaker and Poster Presentation, **Fullerene Structure Regulates FCεRI-Calcium Flux in Human Mast Cells** at the American Academy of Allergy, Asthma, and Immunology in New Orleans, LA, February 2010.
- Poster Presentation, **Effects of Nanomaterials on Allergic Mediator Release from Human Mast Cells through Non-IgE Mediated Pathways** at the American Academy of Allergy, Asthma, and Immunology in New Orleans, LA, February 2010.
- Travel Grant and Selected Speaker, **Fullerene Derivatives as a Novel Approach for Controlling Asthma via Induction of Dual-specificity Phosphatase-1 in Mast Cells** at American Academy of Immunology in San Francisco, CA, April 2011.
- Selected Guest and Poster Presentation. **Fullerene Nanomaterials as a Platform for Developing Therapeutics and Diagnostics for Inflammatory Arthritis** at the Keystone Symposia on Molecular and Cellular Biology: Rheumatoid Arthritis, Molecular and Clinical Insights, Santa Fe, NM, January 2012.
- Poster Presentation. **Nanomaterials for Mast Cell and Basophil Stabilization Through Non-FcεRI Stimuli** at the American Academy of Allergy, Asthma, and Immunology in San Antonio, TX, February 2013.
- Travel Grant and Selected Speaker. **A New Steroid-Mimicking Nanomaterial that Mediates Inhibition of Human Lung Mast Cells Responses** at the American Academy of Immunology in Pittsburgh, PA, May 2014.
- Invited Speaker. **Getting from Academia to Enterprise** at the Joint School of Nanoscience and Nanoengineering in Greensboro, NC, August 2015.
- Invited Expert Panalist. **Improving Crustacean Aquaculture** at the 2015 Biomarine Conference in Wilmington, NC, October 2015.

CURRENT & PAST SUPPORT

A New Sustainable Bait Solution. National Science Foundation Phase II SBIR. Mar 1, 2016 – Feb 28, 2018. Amount: \$750,000.00USD. Role: PI

A New Sustainable Bait Solution. National Science Foundation Phase I SBIR. Jan 1, 2015 – July 31, 2015. Amount: \$150,000.00USD. Role: PI

A New Sustainable Bait Solution. National Science Foundation Phase IB SBIR. Aug 1, 2015 – Dec 31, 2015. Amount: \$18,750.00USD. Role: PI

One Fund North Carolina Matching Grant. North Carolina Secretary of State Dept. of Technology. Award Date: March 2015. Amount: \$50,000.00USD