

Giridhar R. Akkaraju

Curriculum Vita

Educational background:

- 1982-1985 B.S., Chemistry/Biochemistry, University of Bombay
1986-1997 Ph.D., Molecular Genetics, University of Pittsburgh
1998-2000 Post-doctoral Fellow, University of North Texas Health Science Center,
Fort Worth, TX
2000-2002 Post-doctoral Fellow, University of Texas Southwestern Medical Center,
Dallas, TX

Present Rank: Professor, Department of Biology, Texas Christian University, Fort Worth, TX.

Professor, Department of Medical Education, TCU Burnet School of Medicine, Fort Worth, TX.

- Year of Appointment and Rank:** 2002 Assistant Professor
2008 Associate Professor
2016 Professor
2019 Professor, TCU Burnett School of Medicine
2019-2022 Chair, Department of Biology

Previous teaching/research appointments

a. Full Time

- 1998-2000 Post-doctoral research associate, University of North Texas Health Science Center, Fort Worth, TX.
2000-2002 Post-doctoral research fellow, University of Texas Southwestern Medical Center, Dallas TX.

b. Part-time

- 1999-2000 Instructor, Virology and Gene Therapy, Graduate Program, University of North Texas Health Science Center, Fort Worth, TX.
2001, Fall Instructor, Molecular Genetics, University of Texas, Arlington, TX.
2022, Summer Lecturer, TCU Burnet School of Medicine, Fort Worth, TX.

Courses Taught:

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| University of North Texas, Health Science Center | Virology and Gene Therapy |
| University of Texas, Arlington | Molecular Genetics |

Texas Christian University

BIOL 10504 (Principles of life sciences) Lecture coordinator
BIOL 10504 Lab coordinator
BIOL 40021 (Intro. to Biol. Res.)
BIOL 40603 (Virology)
BIOL 30603 (Cell, molecular and developmental biology)
BIOL 40133 (Molecular Basis of Human Disease)
BIOL 40300 (Teaching of Biology)
BIOL 40001 (Honors Seminar: Eating Like the Planet Matters)
BIOL 40001 (Honors Seminar: Biology of Cancer)
BIOL 40090 (Independent Research in Biology: Molecular Biotechnology Lab)
BIOL 60910 (Biology Seminar)
BIOL 40123 (Genetics)

External Support Sought

a) Received:

1. American Cancer Society, Institutional Research Grant. (IRG-01-187-01-022 December 2002) \$10,000
2. The role of Hepatitis C virus proteins in the development of Hepatocellular carcinoma. Cook Children's Hospital/ Cancer Research Foundation of North Texas. June 2008) \$10,000
3. Moncrief Cancer Institute-Texas Christian University, March 2015 \$5000
4. American Society for Virology Travel Award 2015 \$1000
5. NIH/NIGMS R15 Targeting oxidative stress in neurodegeneration using pyridol derived small molecules. June 2018-May 2021. Co-PI. PI: Kayla Green, TCU Department of Chemistry, \$378,914.
6. NIH/NIGMS R15 Building Better Antioxidants: Virtual Screening, Synthesis, and Characterization of Multifunctional Small Molecules Combining Nrf2 Pathway Activation and Direct Antioxidant Activity. February 2022-2025. Co-PI. (PI: Kayla Green, TCU Department of Chemistry), \$379,063.
7. NIH/NIGMS R15 (GM123463-03) Expanding the Facets of Multi-Functional Antioxidant Molecules Through Computational Design and Biological Tools. 08/2025-06/2028 Co-PI (PI: Green) \$374,999.

Internal Grants

1. TCU New Faculty RCAF grant. (Nov. 1, 2002) \$2449
2. TCU RCAF (June 1, 2004) \$3500
3. TCU RCAF (June 1, 2005) \$4000

4. TCU RCAF (June 1, 2006) \$4000
5. TCU RCAF (June 1, 2007) \$4000
6. TCU RCAF (June 1, 2008) \$4000
7. TCU RCAF (June 1, 2010) \$ 1750
8. TCU RCAF (June 1, 2011) \$4000
9. TCU Invests in Research (June 1, 2012) \$12000 (co-PI)
10. TCU RCAF (June 1, 2012) \$3800
11. TCU RCAF (June 1, 2014) \$3750
12. TCU Global Innovator Proposal (June 2014) \$25000
13. TCU RCAF (June 1, 2016) \$4000
14. TCU RCAF (June 1, 2018) \$4000
15. TCU Invests in Scholarship: Quantifying antitumor drug efficacy using mathematical models. Co-PI. PI: Hana Dobrovolny, TCU Department of Physics, August 2018, \$17649

b) Student grants sponsored:

(All the grants listed below were awarded via the TCU CSE SERC)

1. Dani McRaney, Junior Biology Major, \$1500
2. Alejandro D'Brot, Senior Biology Major, \$1500
3. Kim Lehecka, Junior Biology Major, \$1300
4. Sarah Stack, Junior Biology Major, \$1479.26
5. Thomas J. Calder, Senior Biology Major, \$ 1479.36
6. Eric Boudreau, Senior Biology Major, \$ 1,392.75
7. Akshaya Maller, Junior Biology Major, \$1350
8. Kim Tran, Senior Biology Major, \$2300
9. Astrid Linares, Senior Biochemistry Major \$1493
10. Coralee Toal, Junior Biology Major, \$ 1362
11. Nancy Wareing, Junior Biology Major, \$2900
12. Manoj Chelvanambi, Junior Biology Major, \$1500
13. Athanasios Vouzas, Junior Biology Major, \$ 1451
14. Kyle Szymanski, Junior Biology Major, \$ 1412
15. Allison Simkins, Junior Biology Major, \$ 1395
16. Josey Richards, Junior Biology Major, \$ 1219
17. Elli Hoge, Junior Biology Major, \$ 1471
18. Michael Chandra, Junior Biology Major, \$ 1374
19. Julianna West, Junior Biology Major, \$914
20. Eric Reid, Junior Biology Major, \$1107
21. Emily Williams, Junior Biology Major, \$1074
22. Malvika Ramesh, Senior Biology Major, 2017, \$1008
23. Kaitlyn Callaghan, Senior Biology Major, 2017, \$866
24. Stanley Onuegbu, Senior Biology Major, 2018
25. Tate Truly, Senior Biology Major, 2019, \$1351
26. Phat Do, Senior Biology Major, 2019, \$1498
27. Olivia Kinsinger, Senior Biology Major, 2019, \$1283

28. Jacey Elliott, Senior Biology Major, 2019,
29. Ryan Ajgaonkar, Senior Biology Major, 2020, \$1473
30. Ruwayd Abdalla, Senior Biology Major, 2021, \$880
31. Fabian Lopez, Junior Biology Major, 2022, \$1200
32. Halley Tamene, Junior Biology Major, 2022, \$800

Graduate Theses and dissertations directed:

1. Gladys Keitany (M.S) Defended November 2004
2. Berly Gail Pinto (Ph. D.), Defended August 2004, Directed the molecular biology part of her research work. (Primary Advisor: George King, Dept. of Psychology)
3. Melanie Whitehead (M.S.) Defended June 2005, Directed the Biology part of her research work. (Primary advisor: Jeff Coffey, Dept. of Chemistry)
4. Shilpi Subramanian (M.S.) Defended July 2009
5. Molli Jones (M.S) Defended December 2009
6. S. James Gleaton (M.S.) Defended April 2011
7. Kristina McLinden (Ph.D.) Defended July 2011, Directed the cell biology aspect of her thesis project. (Primary Advisor: Gary Boehm, Dept. of Psychology)
8. Yuan Tian (Ph.D.) Defended fall 2013. Directed the cell biology aspect of her thesis project. (Primary Advisor: Jeff Coffey, Dept. of Chemistry)
9. Paulina G. Morales (Ph.D.) Directed the cell biology aspect of her thesis project. (Primary Advisor: Kayla Green, Dept. of Chemistry) 2010
10. Wenjing Lily Wu (M.S.) Defended December 2011
11. Nguyen T. Le (Ph.D) Directed the cell biology aspect of her thesis project. (Primary Advisor: Jeff Coffey, Dept. of Chemistry) 2021
12. Elizabeth Campbell (Ph.D.) Directed the cell biology aspect of her thesis project. (Primary Advisor: Anton Naumov, Dept. of Physics and Astronomy) 2022
13. Bong Lee (Ph.D.) Directed the cell biology aspect of his thesis project. (Primary Advisor: Anton Naumov, Dept. of Physics and Astronomy) 2023
14. Anna Alvarez (M.S.) 2023-2024 (Left program to attend Medical School.)
15. Alina Valimukhametova (Ph.D.) Directed the cell biology aspect of her thesis project. (Primary Advisor: Anton Naumov, Dept. of Physics and Astronomy) 2024
16. Leo Ojeda (Ph.D.) Directed the cell biology aspect of his thesis project. (Primary Advisor: Jeff Coffey, Dept. of Chemistry) 2024

Presentation of Scholarly and creative activities

a. Refereed Publications

1. P.A. Maurides, **G.R. Akkaraju** & R. Jagus. Evaluation of a protein phosphorylation state by a combination of vertical slab isoelectric focusing and immunoblotting. (1989) *Anal. Biochem.*, 183, 144-151.
2. **G.R. Akkaraju**, P. Whitaker-Dowling, J.S. Youngner and R. Jagus. Vaccinia specific kinase inhibitory factor prevents translational inhibition by double-

- stranded RNA in rabbit reticulocyte lysate. (1989) *J. Biol. Chem.* 264, 10321-10325.
3. **G.R. Akkaraju**, L.J. Hansen and R. Jagus. Increase in eukaryotic initiation factor 2B activity following fertilization reflects changes in Redox potential. (1991) *J. Biol. Chem.* 266, 24451-24459.
 4. Huard, J., **Akkaraju, G.**, Watkins, S. C., Pike-Cavalcoli, M. and Glorioso, J.C. LacZ gene transfer to skeletal muscle using a replication-defective Herpes simplex virus Type I mutant vector. (1997) *Human Gene Therapy*, **8**, 439-452.
 5. **Akkaraju, G. R.**, Huard, J. Cohen, J, Goins, W. F. and Glorioso, J.C. Herpes simplex virus vector-mediated dystrophin gene transfer and expression in mdx mouse skeletal muscle (1999) *J. of Gene Medicine*, **1**, 280-289.
 6. Basu, A. and **Akkaraju, G. R.** Regulation of Caspase activation and cis-Diamminedichloroplatinum (II)-induced cell death by Protein kinase C. (1999) *Biochemistry*, **38**, 4245-4251.
 7. **Akkaraju, G. R.** and Basu, A. Overexpression of Protein kinase C-eta attenuates caspase activation and Tumor Necrosis Factor- α -induced cell death. (2000) *Biochem. Biophys. Res. Comm.*, **279**, 103-107.
 8. Wang, C., Deng, L., Hong, M., **Akkaraju, G. R.**, Inoue, J.-I. and Chen, Z. J. TAK1 is a ubiquitin-dependent kinase of MKK and IKK. (2001) *Nature*, **412**, 346-351.
 9. Frederickson, B., **Akkaraju, G. R.**, Foy, E., Wang, C., Pflugheber, J., Chen, Z. J. and Gale, M. Activation of the Interferon-beta promoter during Hepatitis C virus RNA replication. (2002) *Viral Immunology*, **15**, 29-40.
 10. Basu, A., Lu, D., Sun, B., Moor, A. N., **Akkaraju, G. R.** and Huang, J. Proteolytic activation of protein kinase C-epsilon by caspase-mediated processing and transduction of anti-apoptotic signals. (2002) *J. Biol. Chem.*, **277**, 41850-41856.
 11. Melanie A. Whitehead**, Dongmei Fan**, **Giridhar R. Akkaraju**, Leigh T. Canham, Jeffery L. Coffey. Accelerated Calcification in Electrically Conductive Polymer Composites Comprised of Poly(epsilon-caprolactone), Polyaniline, and Bioactive Mesoporous Silicon (2007) *J. of Biomedical Materials Research*, **83A**, 225-234.
 12. R.A. Kohman**, A.J. Tarr**, N.L. Sparkman**, C.E. Day, A. Paquet, **G.R. Akkaraju** and G.W. Boehm. Alleviation of the effects of endotoxin exposure on behavior and hippocampal IL-1 β by a selective non-peptide antagonist of

- corticotropin-releasing factor receptors. (2007) *Brain, Behavior, and Immunity*, **21**, 824-835.
13. M.A. Whitehead**, P. Mukherjee**, **G. Akkaraju**, L. T. Canham and J. L. Coffey. High-porosity poly(ϵ -caprolactone)/ mesoporous silicon scaffolds : calcium phosphate deposition and biological response to bone precursor cells. (2008) *Tissue Eng Part A*. **14**, 195-206.
 14. Medicinal Surface Modification of Silicon Nanowires: Impact on Calcification and Stromal Cell Proliferation. Ke Jiang**, Dongmei Fan**, Yamina Belabassi**, **Giridhar Akkaraju**, Jean-Luc Montchamp, and Jeffery L. Coffey (2009) *ACS Applied Materials & Interfaces*, **1** (2), 266–269
 15. The role of nanostructured mesoporous silicon in discriminating in vitro calcification for electrospun composite tissue engineering scaffolds. Dongmei Fan**, **Giridhar R. Akkaraju**, Ernest F. Couch, Leigh T. Canham and Jeffery L. Coffey (2010) *Nanoscale*, 2011, **3**, 354-361
 16. Kishton, R. J., Miller, S. E., Perry, H., Lynch, T., Patel, M.*, Gore, V. K., **Akkaraju, G. R.**, Varadarajan, S, DNA site-specific N3-adenine methylation targeted to estrogen receptor-positive cells. (2011) *Bioorganic & Medicinal Chemistry*, **19**, 5093-5102.
 17. Silicon Nanowire/Polycaprolactone Composites and Their Impact on Stromal Cell Function. Jiang, K.**; **Akkaraju, G.**; Coffey, J., (2013) *Journal of Materials Research*, **28**, 185-192.
 18. Fe₃O₄-nanoparticles within porous silicon: Magnetic and cytotoxicity characterization. P. Granitzer, K. Rumpf, Y. Tian**, **G. Akkaraju**, J. Coffey, P. Poelt, and M. Reissner, *Applied Physics Letters*, **2013**, 102, (19)
 19. Bimodal-hybrid heterocyclic amine targeting oxidative pathways and copper mis-regulation in Alzheimer's disease. Paulina Gonzalez, Viviana C. P. da Costa**, Kimberly Hyde*, Qiong Wu, Onofrio Annunziata, Josep Rizo, **Giridhar Akkaraju** and Kayla N. Green. *Metallomics*, **2014**, 6(11): 2072-82.
 20. *In Vitro* Analysis of Surface-Modified Stain-Etched Porous Silicon Microparticles for Gene Delivery. Wareing, N.*, K. Szymanski*, **G. Akkaraju**, A. Loni, L.T. Canham, R. Gonzalez-Rodriguez**, J.L. Coffey. **2017**, *In Vitro* Analysis of Surface-Modified Stain-Etched Porous Silicon Microparticles for Gene Delivery. *Small*, v.13.
 21. Synthesis, Characterization, and Activity of a Triazine Bridged Antioxidant Small Molecule. P. Gonzalez**, K. Pota, L.S. Turan, V.C.P. Costa, G. **Akkaraju**, K. N. Green. *ACS Chem Neurosci*. **2017**; **8**(11): 2414

22. A New Triazine bearing a pyrazolone group capable of copper, nickel, and zinc chelation .Yepremyan, A., Mehmood, A.** , Brewer, S. M.** , Barnett, M. M.* , Janesko, B.G., **Akkaraju, G.**, Simanek, E.E., and Green, K. N. **2018**, *RCS Advances*, **8**:3024-3035.
23. Plant-Derived Tandem Drug/Mesoporous Silicon Microcarrier Structures for Anti-Inflammatory Therapy. Kalluri, J.R.** , West, J.* , **Akkaraju, G. R.**, Canham, L.T., and Coffey, J.L. **2019** *ACS Omega*, **4**: 8359-8364.
24. Dialing in on Pharmacological Features for a Therapeutic Antioxidant Small Molecule. Green, K.N., Pota, K., Tircso, G., Gogolak, R.A., Kinsinger, O.* , Davda, C., Blain, K*., Brewer, S.M.** , Gonzalez, P.** , Johnston, H.M.** , and **Akkaraju, G.** *Dalton Transactions*, **2019**, **48**, 12430-12439.
25. Doped Graphene Quantum Dots for Intracellular Multicolor Imaging and Cancer Detections. Campbell, E.** , Hasan, Md. T.** , Rodriguez, R. G., Akkaraju, G. R., and Naumov, A. V. *ACS Biomater. Sci. Eng.*, **2019**, **5**, 4671-4682.
26. Enhancement of the Antioxidant Activity and Neurotherapeutic Features through Pyridol Addition to Tetraazamacrocyclic Molecules. Johnston, H.M.** , Pota, K.** , Barnett, M. M.* , Kinsinger, O.* , Braden, P.* , Schwartz, T.M., Hoffer, E., Sadagopan, N.* , Nguyen, N., Yu, Y., Gonzalez, P., Tircso, G., Wu, H., **Akkaraju, G.**, Chumley, M., and Green, K.N. *Inorganic Chem.*, **2019**, **58**, 16771-16784.
27. Formation of Platinum Nanocrystals on Silicon Nanotubes and Corresponding Anti-Cancer Activity *In Vitro*. Nguyen, T.L.* , **Akkaraju, G.R.**, and Coffey, J.L. *ACS Appl. Bio Mater.* **2020** **3**, 208-216.
28. Effects of Doxorubicin Delivery by Nitrogen-Doped Graphene Quantum Dots on Cancer Cell Growth: Experimental Study and Mathematical Modeling. Frieler, M.* , Pho, C.* , Lee, B., Dobrovolny, H., **Akkaraju, G. R.**, and Naumov, A. *Nanomaterials*, **2021** **11**, 140
29. Using mathematical modeling to estimate time-independent cancer chemotherapy efficacy parameters. Pho. C.* Frieler, M.* , **Akkaraju, G.R.**, Naumov, A. V., Dobrovolny, H.M. *In Silico Pharmacol*, **2021** Dec 5;10(1):2. doi: 10.1007/s40203-021-00117-7
30. Mechanistic Investigation of Site-specific DNA Methylating Agents Targeting Breast Cancer Cells. Lowder, L.L., Powell, M., Miller, S.E., Kishton, R.J., Kelly, C.B., Connor B Cribb, C.B., Mastro-Kishton, K., ¹, Chelvanambi, M*., Do, P.T.* , Govindapur, R.R., , Suzanne E Wardell, S. E., , McDonnell, D.P., Bartolotti, L.J. , **Akkaraju, G.R.**, Frampton, A.R., Sridhar Varadarajan, S. *J. Med. Chem.* **2021** Sep 9;64(17):12651-12669. doi:

- 10.1021/acs.jmedchem.1c00615.
31. Detection of Pancreatic Cancer miRNA with Biocompatible Nitrogen-Doped Graphene Quantum Dots. Ajgaonkar, R.*, Lee, B., Valimukhametova, A., Nguyen, S., Gonzalez-Rodriguez, R., Coffey, J., **Akkaraju, G.R.**, Naumov, A.N. *Materials* **2022**, 15(16), 5760; <https://doi.org/10.3390/ma15165760>
 32. Dual-Mode Fluorescence/Ultrasound Imaging with Biocompatible Metal-Doped Graphene Quantum Dot. Valimukhametova AR, Zub OS, Lee BH, Fannon O, Nguyen S, Gonzalez-Rodriguez R, **Akkaraju GR**, Naumov AV. *ACS Biomater Sci Eng.* **2022**, 8(11):4965-4975. doi: 10.1021/acsbiomaterials.2c00794
 33. *In Vitro* Prostate Cancer Treatment via CRISPR-Cas9 Gene Editing Facilitated by Polyethyleneimine-Derived Graphene Quantum Dots. Lee B, Gries K, Valimukhametova AR, McKinney RL, Gonzalez-Rodriguez R, Topkiran UC, Coffey J, **Akkaraju GR**, Naumov AV. *Adv Funct Mater.* **2023** Nov 23;33(48):2305506. doi: 10.1002/adfm.202305506. Epub 2023 Jul 12. PMID: 38144446; PMCID: PMC10746168.
 34. Cancer Therapeutic siRNA Delivery and Imaging by Nitrogen- and Neodymium-Doped Graphene Quantum Dots. Valimukhametova AR, Lee BH, Topkiran UC, Gries K, Gonzalez-Rodriguez R, Coffey JL, **Akkaraju G**, Naumov A. *ACS Biomater Sci Eng.* **2023** Jun 12;9(6):3425-3434. doi: 10.1021/acsbiomaterials.3c00369. Epub 2023 May 31. PMID: 37255435.
 35. Impact of Indole Inclusion in the Design of Multi-Tactical Metal-Binding Tetra-Aza Macrocycles that Target the Molecular Features of Neurodegeneration. Kristof Pota, Shrikant Nilewar, Christina Mantsorov, Lindsay Zumwalt, Nam Nguyen, Cameron J Bowers**, David M Freire, Robert B Benafield 3rd**, **Giridhar R Akkaraju**, Kayla N Green *ACS Chem Neurosci.* 2024 Oct 1. doi: 10.1021/acchemneuro.4c00530.
 36. Rings of Power: Controlling SOD Mimic Activity by the Addition of Pyridine Rings within the Pyridinophane Scaffold (2024) Smith, K.J., Schwartz, T.M., Freire, D.M., Bowers, C.J., Dunn, S.K., Bonnell, J.F., Mekhail, M.A., Akkaraju, G. and Green, K.N. *Inorg Chem.* 63(50):23544-23553.
 37. Topkiran UC, Valimukhametova AR, Vashani D, Paul H, Dorsky A,* Sottile O.*, Johnson DA, Burnett W, Coffey JL, **Akkaraju GR**, Naumov AV. Holistic Investigation of Graphene Quantum Dot Endocytosis. *Small.* 2025 Mar;21(9):e2406095. doi: 10.1002/smll.202406095. Epub 2025 Feb 2. PMID: 39895235; PMCID: PMC11878264.

b. Non-refereed Publications

1. Huard, J., Goins, W.F., **Akkaraju, G.R.**, Krisky, D., Oligino, T., Marconi, P., Day, C.S., Glorioso, J.C. Gene transfer to muscle and spinal cord using herpes simplex virus-based vectors. *Stem Cell Biol. Gene Ther.* (1998) P.J. Quesenberry, G.S. Stein, B. Forget and S. Weissman (eds.), John Wiley and Sons, Inc., pp. 179-200.
2. Basu, A. and **Akkaraju, G. R.** Compartmentalized protein kinase C activation in ovarian carcinoma cells. IN: *Methods in Molecular Medicine, Ovarian Cancer*, ed. Bartlett, J. Humana Press (2000).
3. Porous Silicon-Based Scaffolds for Tissue Engineering and Other Biomedical Applications. (2005) Jeffery L. Coffe, Melanie A. Whitehead**, Dattatri K. Nagesha, Priyabrata Mukherjee**, **Giridhar Akkaraju**, Mihaela Totolici, Roghieh S. Saffie, and Leigh T. Canham. *Physica Status Solidi A-Applications and Materials Science* **202** (8): 1451-1455

c. Materials Accepted but not yet presented: None

d. Materials under active review: None

e. Posters presented at scholarly meetings:

1. **Akkaraju, G. R.**, Gale, M., Chen, Z. J. (2003) Inhibition of antiviral gene expression by Hepatitis C virus protein NS5A. *Proc. Amer. Assoc. Cancer Res.*, **44**, 1014.
2. Chen L.*, Nezafati, K.* and **Akkaraju, G. R.** (2004) Hepatitis C virus protein NS5A blocks antiviral gene expression and apoptosis in the infected cell. 57th annual symposium on Fundamental Cancer Research, UT MD Anderson Cancer Center, Signal Transduction: From Pathways to networks. Oct. 12-15, Houston TX.
3. Coffe, J. L. , Whitehead, M. A.**, Nagesha, D. K**, **Akkaraju, G. R.**, Totolici, M., Saffie, R. S. and Canham, L. T. (2004) 'Porous silicon-based scaffolds for tissue engineering and other biomedical applications'. (**Poster** presented at the 4th International Conference on: Porous Semiconductors- Science and Technology, Cullera-Valencia, Spain, 14-19th March, 2004. Presented by Dr. Jeffrey Coffe)
4. Chen, L.*, Nezafati, K. A.*, Kingeter, A. J.*, and **Akkaraju, G. R.** 'Hepatitis C virus protein NS5A inhibits etoposide-induced apoptosis in HeLa cells'. (**Talk** presented at the International Symposium for Translation Research, Apoptosis and Cancer, Trivandrum, India, December 2005)
5. Electrospun porous silicon composites for orthopedic tissue engineering: scaffolding with mesenchymal stem cells. Jeffery Coffe, Fan, D**., Whitehead, M. A.**, **Akkaraju, G. R.**, Couch, E.F., Loni, A. and Canham, L.T. (**Poster**

- presented at the 5th International Conference on: Porous Semiconductors- Science and Technology, Barcelona, Spain, 12-17th March, 2006. Presented by Dr. Jeffrey Coffey)
6. 'Technique for retaining the morphology of cells grown on a polycaprolactone scaffold'. Dongmei Fan**, **Giridhar Akkaraju**, Jeffrey Coffey, . **Talk** presented by Dongmei Fan (Graduate student, Chemistry department) at the annual meeting of the Texas Society for Microscopy, Fort Worth TX, April 14-16, 2006
 7. 'Visualization of NS5A activity via fluorescence microscopy.' Alejandro D'Brot*, **Giridhar Akkaraju**, Texas Journal of Microscopy, **37**, 1, 2006. (**Talk** presented by Alex D'Brot [Senior, Biology]) at the annual meeting of the Texas Society for Microscopy, Fort Worth TX, April 14-16, 2006.
 8. 25th Annual Meeting of the American Society for Virology, Madison, WI, July 14-19, 2006, 'Hepatitis C virus non-structural protein NS5A inhibits caspase activation and stimulates cell growth in 293 HEK cells'. (**Talk** given by **Giri Akkaraju**.)
 9. The mechanisms of Hepatitis C virus non-structural protein NS5A inhibition of apoptosis and deregulation of the cell cycle. **Giridhar R. Akkaraju**, Sarah E. Stack*, Kim E. Lehecka* and Lei Chen*. (**Poster** presented at the 26th Annual meeting of the American Society for Virology, Corvallis OR, July 14-18, 2007.)
 10. Mutants of Hepatitis C virus non structural protein NS5A differ in their ability to inhibit apoptosis and deregulate the cell cycle. Thomas J. Calder*, S. James Gleaton*, Miraie Wardi* and **Giridhar R. Akkaraju**. (**Talk** given by Giri Akkaraju at the annual meeting of The International Congress of Virology, International Union of Microbiological Societies, Istanbul, Turkey, August 10-15, 2008.)
 11. Development and characterization of an assay for the identification of compounds capable of inhibiting Hepatitis C virus proteins. Giridhar R. Akkaraju, Alejandro D'Brot*, Eric R. Boudreau*, Akshaya Maller* and Manfred Reinecke. (**Poster** presented at the 28th Annual meeting of the American Society for Virology, Vancouver, B.C., Canada, July 11-15 2009.)
 12. McLinden, K.A.**, Tarr, A.J**, **Boehm, G.W., Akkaraju, G.** The effect of interleukin-1 β and tumor necrosis factor- α on PC12 cells. 2009 *Psychoneuroimmunology Research Society* , Breckenridge ,CO
 13. 'Identifying Cellular Proteins Interacting with Mutants of Hepatitis C virus Non-Structural Protein NS5A.' **Poster** presented at the 28th Annual Meeting of the American Society for Virology in Bozeman MT, July 11-15, 2010. **Giridhar R. Akkaraju**, Molli Jones**, Shilpi Subramanian**, James Gleaton**.

14. 'Effect of linker modification on the biochemical properties of DNA-methylating molecules targeted to estrogen receptor-positive cells.' Sean Miller, Rigel Kishton, **Mayur Patel***, **Giridhar R. Akkaraju**, Sridhar Varadarajan. **Poster** Presented at SERMACS (The Southeastern regional meeting of the American Chemical Society) in New Orleans, LA, Nov. 30-Dec. 4, 2010.
15. 'DNA methylation and cytotoxic properties of compound designed to produce N3-methyladenine adducts in estrogen receptor-positive cells.' Rigel Kishton, Sean Miller, **Mayur Patel***, **Giridhar R. Akkaraju**, Sridhar Varadarajan. **Poster** Presented at SERMACS (The Southeastern regional meeting of the American Chemical Society) in New Orleans, LA, Nov. 30-Dec. 4, 2010.
16. 'Development of a targeted breast cancer drug.' **Mayur Patel***, Sean Miller, Rigel Kishton, Sridhar Varadarajan and **Giridhar Akkaraju**. **Poster** presented at the Undergraduate student research symposium, The University of North Texas Health Science Center in Fort Worth. Nov. 5, 2010.
17. 'Using flow cytometry to screen for drugs against Hepatitis C virus.' **Akshaya Maller***, **Giridhar Akkaraju**, and Manfred Reinecke. **Poster** presented at the Undergraduate student research symposium, The University of North Texas Health Science Center in Fort Worth. Nov. 5, 2010.
18. 'Size-dependent assessment of Fe₃O₄-nanoparticles loaded into porous silicon.' Granitzer, P., Rumpf, K., Tian, Y., **Akkaraju, G.**, Coffey, J., Poelt, P., Morales, P.***, and Riessner, M. (2011) **Poster** presented at PRIME: The Pacific Rim meeting on Electrochemical and Solid-state Science. Honolulu, HI. October 7-12, 2012.
19. The impact of HCV NS5A on the host innate immune response. Wu, W.***, Gleaton, J.***, Toal, C.*, Chelvanambi, M.*, and **Akkaraju, G.** (2012) **Poster** presented at the North Texas Life Science Research Symposium. November 3, 2012, University of North Texas Health Science Center, Fort Worth.
20. The mechanism by which Hepatitis C virus non-structural protein NS5A attenuates virus-induced activation of the interferon beta promoter. **Akkaraju, G.**, Wu, W.***, Chelvanambi, M.*, Toal, C.*, and Gleaton, S. J.** (2013) **Poster** presented at the 32nd Annual Meeting of the American Society for Virology in Pennsylvania State University, State College, PA, July 20-24.
21. N3-methyladenine formation by estradiol conjugates with a DNA minor groove methylating agent: effect of structure on DNA methylation and cell toxicity. Sean E. Miller, Rigel J. Kishton, Kelly Mastro, Charles Kelly, Matthew Powell, Astrid Linares*, Manoj Chelvanambi*, Vinayak K. Gore, **Giridhar R. Akkaraju** Sridhar Varadarajan (2013) **Poster** presented at SERMACS2013, Atlanta GA, Nov. 12-16.

22. Size-dependent assessment of Fe₃O₄-nanoparticles loaded into porous silicon. Granitzer, P., Rumpf, K., Tian, Y.**, **Akkaraju, G.**, Coffey, J., Poelt, P. and Reissner, M. (2013) ECS Transactions (*Presented at 224th ECS Meeting, Oct.27 – Nov.1, Electrochemical/Chemical Deposition and Etching*).
23. Porous Silicon With Deposited Iron Oxide As Vehicle for Magnetically Guided Drug Delivery. Rumpf, K., Granitzer, P., Tian, Y.**, **Akkaraju, G.**, Coffey, J., Poelt, P., Reissner, M. Poster presentation at the 224th ECS Meeting in San Francisco, California (October 27-November 1, 2013).
24. *In Vitro* analysis of surface modified stain etched porous silicon. Wareing, N.*, **Akkaraju, G.**, Tian Y.**, Rodriguez, R.**, Loni, A., Canham L.T., Coffey, J. **Poster** presented at PSST2014, March 9-14, 2014, Alicante, Valencia, Spain.
25. Inhibition of virus-induced Interferon beta gene expression by mutants of NS5A and their effect on HCV replication. Wu, W.**, Gleaton, J.**, Richards, J.*, Toal, C.*, Chelvanambi, M.*, and **Akkaraju, G.** **Poster** presented at IUMS2014, Montreal QC, July 28-August 1, 2014.
26. *In Vitro* analysis of surface modified stain etched porous silicon. Wareing, N.*, **Akkaraju, G.**, Tian Y.**, Rodriguez, R.**, Loni, A., Canham L.T., Coffey, J. **Poster** presented at PSST2014, March 9-14, 2014, Alicante, Valencia, Spain.
27. Treatment of Alzheimer's disease with bimodal hybrid heterocyclic amine ligands: A closer look into the oxidative pathways and copper misregulation in the disease. P. Gonzalez**, **G. Akkaraju**, K. Green. **Poster** presented at the 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, Texas.
28. Hybrid small molecules using lipoic acid as antioxidant chelators designed to target amyloid and the molecular features associated with neurodegenerative disorders. K. N. Green, P. M. Gonzalez**, K. M. Lincoln**, **G. Akkaraju**. **Poster** presented at the 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, Texas.
29. Silicon Nanotube-based drug delivery/gene therapy. Y. Tian**, R. Gonzalez-Rodriguez**, J. L. Coffey, **G. R. Akkaraju**. **Poster** presented at the 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, Texas.
30. DNA binding, DNA methylation and cell toxicity of estradiol conjugated DNA methylating compounds. M. Powell, S. Miller, R. Kishton, K. Mastro, M. Chelvanambi*, A. Linares*, V. K. Gore, **G. R. Akkaraju**, S. Varadarajan. **Poster** presented at the 247th ACS National Meeting and Exposition, March 16-20, 2014, Dallas, Texas.
31. Inhibition of virus-induced Interferon beta gene expression by mutants of NS5A and their effect on HCV replication. Wu, W.**, Gleaton, J.**, Richards, J., Toal,

- C.*, Chelvanambi, M*., and **Akkaraju, G. Poster** presented at IUMS2014, Montreal QC, July 28-August 1, 2014.
32. The Hepatitis C virus non-structural Protein NS5A attenuates virus-induced activation of the Interferon-beta promoter by inhibiting the activation of transcription factor NF-kB. Akkaraju, G. R., Richards, J.M*., Hoge, E.M*. and Vouzas, A*. **Talk** given at the Annual Meeting of the American Society for Virology, London ON, 2015.
 33. The Effect of Hepatitis C virus Non-structural protein NS5A on transcription factor NF-kB. Hoge, E., Richards, J., and Akkaraju, G.R. Poster presentation at the Regional meeting of the American Society for Microbiology, Texas Chapter, New Braunfels, TX 2016
 34. HCV protein NS5A inhibits downstream expression of Interferon-sensitive genes by preventing NF-kB-mediated activation of the Interferon-beta promoter. Callaghan, K.,** Reynolds, E.***, and Akkaraju, G. **Poster** presented at the Annual Meeting of the American Society for Virology, College Park, MD, 2018.
 35. Exploring the mechanism of action of novel antioxidant compounds in the treatment of Alzheimer's Disease. Poster presented at the Annual Meeting of the Society for Neuroscience, San Diego, CA. November 15-19, 2025

f. Invited Seminars:

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| 2003 | University of North Texas Health Science Center, Department of Molecular Biology and Immunology, Fort Worth TX. |
| 2014 | TCU, College of Education. Invited to give a talk as part of a teacher training program, "Teacher Quality Grant (TQC # 24289) "Biology: A crime scene investigation". |
| 2014 | University of Texas Southwestern Medical Center, Dallas, Texas. "What's your five-year plan? From graduate student to associate professor in five easy steps!" Talk given as part of the UTSW Medical Center Graduate Student Association Quest for Careers series. September 18, 2014. |
| 2014 | Interviewed on WBAP Radio 820AM on the Brian Estridge show on the topic of the Ebola Virus Epidemic. August 7, 2014. |
| 2015 | The International American University College of Medicine, Vieux Fort, St. Lucia, West Indies. "Inhibition of the Innate Immune Response by Hepatitis C Virus: A Key to Persistent Infection?" |

Academic Advising Activities:

2002- present Member, Health Professions Advisory Committee, Texas Christian University
2002-present Academic Advisor, Pre-health professions
2013-2019 Coordinator, Pre-health Community Scholar Mentoring Program

Departmental Service:

2003-present Member, Safety Committee, Department of Biology
2003-present Faculty Sponsor, Biology Club
2005-present Member, Departmental Assessment Committee
2006-2007 Member, Committee on Graduate Studies
2019-2022 Chair, Department of Biology

College Service

2002-present Member, Health Professions Advisory Committee, Texas Christian University
2006-present Member, Science and Engineering Chemical Safety Committee
2006-2014 Member, Student Research Symposium Committee (Chair 2011)

University Service

2003 Faculty Facilitator, Frog Camp, Challenge B
2003-2009 Faculty Facilitator, Connections Program
2005-2018 Faculty Facilitator, Common Readings Program
2006 Selection committee, Pillars of University Leadership
2007-2018 Chair, Institutional Biosafety Committee
2003-2009 Member, Institutional Animal Care and Use Committee
2007-2019 Common Readings Steering Committee
2010 Faculty Facilitator, Frog Camp, Quest
2011-2014 Member, University Graduate Council
2012 Faculty Facilitator, Frog Camp, Alpine
2013-2014 Faculty Senate (Stand-in for faculty on sabbatical, Fall 2013)
2014-2019 Member, University Diversity Committee
2014-2015 Member, Dean Search Committee, Harris College of Nursing and Health Sciences
2014-2019 John V. Roach Honors College Faculty Advisory Committee
2021-2022 Chair, Wassenich Award Selection Committee
2023-Present Member, TCU Global Advisory Committee
2024-present Member, TCU Faculty Senate

Memberships in Professional Organizations

1997-2005 Member, American Association for the Advancement of Science.
2002-2008 Member, American Association for Cancer Research
2000-2002 Member, Institute for Cancer Research, University of North Texas Health Science Center

2006-present Full Member, American Society for Virology
2025-present Member, Society for Neuroscience

Honors/ Awards

1998-2001 Alcon Research Laboratories Research Achievement Award
2005 TCU Panhellenic, Outstanding Professor of the Year award
2007, 2008 Mortar Board Preferred Professor
2007 Exceptional Honors Professor
2011 Honors Faculty Recognition Award (Honors Professor of the Year)
2013 Department of Housing and Residence Life, Faculty Appreciation Award
2020 TCU Wassenich Award for Mentoring

Other professionally related activities:

1. Book review: Brooker Biology First Edition
2. Grant reviewer: Medical Research Council, UK
3. Manuscript Reviewer: Tissue Engineering, Bentham Science Publishers
Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry
4. TCU/UNT School of Medicine: 'Facebook Live' Panelist- SARS-CoV-2
Vaccine discussion (2021)
5. TCU Alumni Association: Lunch Webinar: SARS-CoV-2 Vaccine (2021)