

Curriculum Vitae: Gregory D. Goins

Professional Preparation

UNC -Chapel Hill	Biology	B.S.	1988
North Carolina State Univ.	Interdisciplinary Crop Science	M.S.	1991
North Carolina State Univ.	Interdisciplinary Crop Science	Ph.D.	1993
Uni. of Minnesota	USDA-ARS Soil, Water and Climate Postdoc		1994-1995

Appointments

2021-Current Associate Dean for Agricultural Research
2020-Current Founder and Director of the Small Farms Resource Innovation Center (SFRIC)
2019-2023 Professor and Chair of the Dept. of Natural Resources and Environmental Design
2016-2019 Professor of Environmental Biology NCATSU Dept. of Biology
2013-2014 NSF Division of Undergraduate Education Program Director
2010-2016 Associate Prof. of Environmental Biology NCATSU Dept. of Biology
2004-2009 Assistant Prof. of Environmental Biology Prof. NCATSU Dept. of Biology
2000-2003 Adjunct Associate Professor, IFAS, University of Florida Dept. of Horticulture
1995-2003 Research Scientist, Plant Space Biology and Environmental Systems, NASA-Kennedy, FL
1994-1995 Post-Doctoral Research Associate, USDA-ARS, Univ. of Minnesota

Graduate and Postdoctoral Advisors

- M.S. and Ph.D. Graduate Advisor: David Danehower, Dept. of Crop Science, N.C. State Univ.
- Post Doctoral Advisor: Michael Russelle, Ph.D., USDA-ARS, Soil, Water, and Climate Unit, Univ. of Minnesota

Distinguished Advisory Boards, Steering Committees, Honors, and Awards

- Secretary of USDA Advisory Committee on Beginning Farmers and Ranchers
- Council for Agricultural Science and Technology (CAST) Board of Trustees
- State of NC Board Member for Certified Crop Advisors 2022-Current
- Ag Cybersecurity 2024 Planning Committee Member "Building a Research Collaboration Network in Agriculture Cybersecurity".
- Advisory Council Member for the Foundation for Food & Agriculture Research (FFAR) Next Generation Crops Challenge Area 2021-Current
- Ag Innovation 2024 Fall Meeting Planning Committee Member
- Chairman of the USDA Specialty Crop Committee for the Advisory Board of the National Agricultural Research, Extension, Education, and Economics (NAREEE) 2022-Current
- Higher Education Symposium 2024 Steering Committee on Interdisciplinarity and Our Collective Climate Challenge
- John Deere LEAP Coalition Partnership Member 2022-Current
- Leader of the NSF National Convergence Accelerator Summit for Digital and Precision Agriculture May 2021
- NSF Core Leader of the National Collaborative for Research on Food, Energy, and Water Education 2021-Current
- Co-Author of External Review Report and Reviewer of the NOAA Cooperative Coastal Center for Coastal and Marine Ecosystems Science Center at Florida A&M State University
- NSF INCLUDES Coordination Hub Internal Advisory Group 2021-Current

- National Institutes of Health TWD Proposal Review Study Group for MARC RISE, GRISE IRACDA, PREP 2018-2023
- Co-Chair of the NSF National Convergence Accelerator for Digital Agriculture 2022
- Awarded by the White House - 2015 Champion of Change for HBCUs – 1 of 11 People Recognized in the Nation. February 2015.
- 4-H National Science Experiment Authors: Gregory Goins, Claudette Smith, and Stephanie Luster-Teasley, and. The first-ever 4-H National Science Experiment to originate from an 1890 Land-Grant University
- W.K. Kellogg Biological Station (KBS) –BEACON Minority Affairs Committee NSF Program Officer for Robert T. Noyce, IUOE, and S-STEM Programs. 2013-2014.
- USDA-NIFA-OP-005055 Panel Reviewer. 2015-Present Alfalfa and Forage Research Program (AFRP).
- HHMI Constellation Studio Keynote Plenary Speech 2017 “Advancing Science Students Mastery of Quantitative Skills: A faculty Development Perspective” March 8-10, 2017
- Morehouse NSF HBCU-UP Planning Grant STEM Broadening Participation Research Center Initiative Planning
National Academy of Sciences Data Science Committee Meeting May 1-3, 2017
- Tenn State Biology Department External Reviewer 2016
- U of Maryland Eastern Shore Biology Program External Reviewer 2015
- College of Arts and Sciences Outstanding Teaching Award Recipient, January 2013
- Arts and Sciences Merit Junior Faculty Award Recipient, November 2009.
- National Academy of Sciences Highlighted Success Stories looking toward the future of biology education “Beyond BIO2010” May, 2010.
- International Research Recognition in Greece, Belgium, Canada, France, England, and Ukraine
- NCA&TSU Best in Class Teaching and Learning with Technology – 2006
- Cooperating Advisor for Tuskegee Univ. - NASA Office of Equal Opportunity Programs -Sweet potato stem cuttings database in preparation for spaceflight. 2001-2003
- Technical review committee member for Tuskegee University’s Center for Food and Environmental Systems for Human Exploration of Space (CFESH). 1999-2002
- NASA Space Flight Awareness Award (Highest NASA Science Researcher Award) – 2001 For Success in Controlled Environment Agriculture for designing experiments with Potato (on Space Shuttle STS-73) and Wheat (on International Space Station)
- NCSU Graduate Dean's Academic Achievement Award - 1992
- NCSU College of Ag and Life Sciences Academic Achievement Award - 1992
- UNC-CH Chancellor's Award for Botany 1988

Synergistic Activities

- Google Ignite CS Award
- Noyce Scholar STEM K-12 Pre-Service Teacher Mentor
- USDA NIFA AFRI Review Panel Since 2016
- MATLAB Quantitative Teaching Conference Keynote Address Oct 2016
- NSF SSTEM Reviewer June 2016
- NC-ACTE Sept 2016
- BIOQUEST Curriculum Consortium Advisory Board
- NIMBIOS – National Institute for Mathematical and Biological Synthesis Working Group-
Unpacking the Black Box: Teaching Quantitative Biology
- NC A&T Biological Engineering Advisory Board 2010-2014

- Chairperson Minority Affairs Committee Symposium for the American Society of Plant Biologists 2007 Annual Meeting.
- Research Council Member for the Division of Research and Economic Development
- NSF Ad-Hoc Review– Undergraduate Research and Mentoring in Biological Sciences Program 2007.
- College of Arts and Sciences Retention and Promotion Committee 2012-Current.
- College of Arts and Sciences Undergraduate Research Committee 2012-Current.
- NCA&T Academic Sub-Committee of the Technical Advisory Steering Committee (TASC) 2011- Current. Appointed by Provost to Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) Institutional Leadership Team.
- NIH NIGMS Bridges to the Baccalaureate Panel Reviewer 2013.
- NSF Sponsored UBM Principal Investigator BLEND Undergraduate Biomathematics Program 2006-2013.
- NSF Sponsored I-CUBED Co-Principal Investigator for Systems Biology at NC A&T 2010-2016.
- Member NIMBios Committee to Promote Diversity 2008-2010.
- NSF Panelist Review- Organism-Environment Interactions 2007.
- NSF CCLI Phase I, II, and III Reviewer 2007-2011.
- NC A&T Best in Class Teaching and Learning with Technology – 2006.
- National Computational Science Institute Workshop Co-Organizer at NC A&T 2004.

Membership(s) in professional organizations

- Member of the USDA North Central Extension & Research Activity (NCERA-101) committee
- Member of Gamma Sigma Delta Honor Society of Agriculture
- Member of American Society of Plant Biologists
- Member of Sigma Xi Scientific Research Society
- Member of American Society for Gravitational and Space Biology
- Member of National Science Teacher Association

Natural Resources - State, National, and International Dissemination

- Horticulture 210 Science of Plants
- NARS 498
- USDA Agriculture in the Class Room – Author “Growing Salad Plants in Space”
- NC State Agricultural Institute (AGI) Lecture - Crop Science
- 2010 4-H National Science Experiment Co-Author (with C. Smith and S. Luster-Teasley)
- PBS Tree-House Detectives Series “Case of the Prize-Winning Plants” Co-Author
- NC A&T AGED 709 – Technical Advances and Best Practices to Agriculture (2009-Current)
- Instructor – NCSU Extension - Border Belt of North Carolina
- Brevard County Extension Service Plant Science Lecturer

Major Thesis Major Advisor and/or Committee Member – Recently Completed Projects

- Taylor Hogue. Major MS Thesis Advisor. Goins, 2018-2019 Duckweed Bioremediation of Phosphorus in a Model Laboratory Greywater System M.S. Major Advisor 2018-2019
- Nariah M. Johnson Major MS Thesis Advisor. Goins, 2018-2019 Duckweed as a Model System for Aspirin Bioremediation in Wastewater
- Amira Burton Influence of Solution Management Major MS Thesis Advisor. Goins, 2017-2018 Techniques on Nutrient Use Efficiency in Hydroponically Grown Salad-type Plants
- Candice T. Young PhD EES PhD Committee Member 2014-2016, Development, and application

- of research tools for evaluating environmental lung exposures
- Chakia J. McClendon MS Animal Health Science Thesis Committee Member
2010-2012, Comparative proteomic analysis of the impact of management programs on porcine airways
- Jessica McClain Major Advisor. Goins, North Carolina A&T State University (M.S.). Using MATLAB: Simbiology in the Diagnosis of Triple Tracer modeling of Type-2 Diabetics Patients versus Normal Patients. 2013.
- Candice Thompson-Young North Carolina A&T State University (M.S.) Major MS Thesis Advisor. Goins Space Radiation Countermeasures in a Life Support System of Extraterrestrial Environments. Graduated 2012.
- Isaac Martinez - Major MS Thesis Advisor. Goins, North Carolina A&T State University (M.S.) Using The Minimal Model In The Diagnosis And Prevention Of Equine Laminitis Related to Insulin Resistance. Graduated 2011.

Peer-Reviewed Publications

1. Gerald-Goins, T.M., Spence, P.L. & Goins, G.D. (2023) Development of a Low-Cost Affordable Inquiry-Based System-Thinking STEM Prospectus: Food, Water, and Energy Learning Module Workbooks (pages 127-147). Developing and Sustaining STEM Programs Across the K-12 Education Landscape. DOI: 10.4018/978-1-6684-7771-7
2. Spence, P., Goins, G. D. 2021. Food, Energy and Water Learning Module Workbooks (FEWLM): Low-Cost Affordable Inquiry-based STEM Curricula Journal of STEM Outreach. Journal of STEM Outreach. Vol 4. Issue 1:1-15.
3. Kalan, M. E., Sis, H. Y., Goins, G. D., Harrison, S. H., Kelkar, V. A., Jafarabadi, M. A., Han, J. 2018. The Identification of Risk Factors Associated with Patient and Healthcare System Delays in the Treatment of Tuberculosis in Tabriz, Iran. BMC Public Health, 18(1), 174.
4. Goins, G.D., 2017 STEM Communication through Socio-environmental Systems In and Out of Under-served Localities. Arch Biol Eng. 1(1) 1-2. Archives of Biology & Engineering
5. Goins, G.D., T.C. Redd, M. Chen, C.D. White, and D.P. Clemence 2016. Forming a Biomathematical Learning Alliance Across Traditional Academic Departments. International Journal for Innovation Education and Research 4:16-23.
<http://www.ijer.net/index.php/ijer/article/view/461/451>
6. Goins, G.D. 2016. An Essay on Integrative Biomathematical Learning Alliances Across Academic Departments. In Teaching Computation in the Sciences Using MATLAB®. Carleton College, North Field, MN. http://serc.carleton.edu/matlab_computation2016/essays/159671.html
7. Goins, G.D. 2016. Mathematical Analysis of Type-2 Diabetes Predisposition. In Teaching Computation in the Sciences Using MATLAB®. Carleton College, NorthField, MN. http://serc.carleton.edu/matlab_computation2016/activities/159662.html
8. Goins, G.D. 2012. Promoting Diversity in Biomathematics-related Careers. pp. 20-22 *In* International Innovation. Educate to Innovate: How STEM Education is Heralding a New Dawn for North American Research. Research Media Ltd. Bristol, UK. ISSN# 2041-4552 Issue 6, November 2012.
9. Goins, G., C. White, M. Chen, V. Kelkar, D. Clemence, and T. Redd, 2010. An Initiative to Broaden Diversity in Undergraduate Biomathematics Training CBE—Life Sciences Education. Vol 9. Special Biomathematics Issue.
10. Goins, G., S. Luster-Teasley, C. Smith. 2010. National Science Experiment 4-H20:4-H. United States Department of Agriculture Youth Science Day Facilitator’s Guide. 20 pgs.
11. Goins, G.D., C.D. White, D.B. Foushee, M.A. Smith, J. J. Whittaker, and G.S. Byrd 2009. A Multi-Faceted Pipeline to Success for Undergraduates Pursuing Bioscience Degrees. New York. Thurgood Marshall College Fund: HBCUs Models for Success. New York. Pp 53-77 ISBN 978-1-

61584-232.

12. Stutte, G.S., O.M. Monje, B. Tripathy, and G.D. Goins. 2005 Microgravity Effects on thylakoid, single leaf, and whole canopy photosynthesis of dwarf wheat. *Planta*. 222:336-345.
13. Kim, H.H., G.D. Goins, R.M. Wheeler, J.C. Sager, N.C. Yorio. 2005. Light-emitting diodes as an illumination source for plants – A review of research at Kennedy Space Center. *Habitation 10*: 71-78.
14. Kim, H.H., G.D. Goins, R.M. Wheeler, and J.C. Sager. 2004. A comparison of growth and photosynthetic characteristics of lettuce grown under red and blue light-emitting diodes (LEDs) with and without supplemental green LEDs. *Acta Hort*. 659: 467-475.
15. Goins G. D., N.C. Yorio, and R.M. Wheeler. 2004. Influence of nitrogen nutrition management on biomass partitioning and nitrogen use in hydroponically grown potato. *Journal of the American Society for Horticultural Science* 129:134-140.
16. Kim, H.H., G.D. Goins, R.M. Wheeler, and J.C. Sager. 2004. Green light supplementation for enhanced lettuce growth under red and blue light-emitting diodes. *HortScience* 39:1617-1622.
17. Kim, H.H., G.D. Goins, R.M. Wheeler, and J.C. Sager. 2004. Stomatal conductance of lettuce grown under or exposed to different light qualities *Annals of Botany* 94:691-697.
18. Goins, G.D., N.C. Yorio, G.W. Stutte, R.M. Wheeler, and J.C. Sager. 2003. Baseline environmental testing of candidate salad crops with horticultural approaches and constraints typical of spaceflight. *SAE International Technical Paper Series # 2003-01-2481*.
19. Richards, Jeffrey T., Sharon L. Edney, Neil C. Yorio, Gary W. Stutte, Nathan Cranston, Raymond M. Wheeler, and Gregory D. Goins. Effects of Lighting Intensity and Supplemental CO₂ on Yield of Potential Salad Crops for ISS. No. 2004-01-2296. *SAE Technical Paper*, 2004.
20. Monje, O., G. W. Stutte, G. D. Goins, D. M. Porterfield and G. E. Bingham. 2003. Farming in space: Environmental and biophysical concerns. *Advances in Space Research*. 31:151-167.
21. Goins, G.D. 2002. Growth, stomatal conductance, and leaf surface temperature of Swiss chard grown under different artificial lighting technologies. *Soc. Automotive Eng. Tech. Paper* 2002-01-2338.
22. Wheeler R., G. Goins, N. Yorio, C. Mackowiak, G. Stutte, L. Ruffe, J. Sager, E. Stryjewski, C. Hinkle, and W. Knott. 2001. A Crop Handbook for Advanced Life Support Systems: Observations and Recommendations from the Kennedy Space Center Breadboard Project.
23. Stryjewski, E., Goins, G., and Kelly, C., "Quantitative Morphological Analysis of Spinach Leaves Grown Under Light-Emitting Diodes or Sulfur-Microwave Lamps," *SAE Technical Paper* 2001-01-2272, 2001, <https://doi.org/10.4271/2001-01-2272>.
24. Goins, G.D., L.M. Ruffe, N.A. Cranston, N.C. Yorio, R.M. Wheeler, and J.C. Sager. 2001. Salad crop production under different wavelengths of red light-emitting diodes (LEDs). *Soc. Automotive Eng. Tech. Paper* 2001-01-2422.
25. Stutte, G., Monje, O., Goins, G., and Ruffe, L., "Evapotranspiration and Photosynthesis Characteristics of Two Wheat Cultivars Measured in the Biomass Production System," *SAE Technical Paper* 2001-01-2180, 2001, <https://doi.org/10.4271/2001-01-2180>
26. Yorio, N.C., G.D. Goins, R.M. Wheeler, and J.C. Sager. 2000. Improving spinach, radish, and lettuce growth under red light-emitting diodes (LEDs) with blue light supplementation. *HortScience* 36:380-383.
27. Goins, G.D. and N.C. Yorio. 2000. Spinach growth and development under innovative narrow- and broad-spectrum lighting sources. *Soc. Automotive Eng. Tech. Paper* 2000-01-2290.
28. Tibbitts, T.W., J.C. Croxdale, C.S. Brown, R.M. Wheeler, and G.D. Goins. 1999. Ground-based studies and space experiment with potato leaf explants. *Life Support & Biosphere Science*. 6:97-106.
29. Johnson, C., Langhans, R., Albright, L., Combs, G. et al., "Spinach: Nitrate Analysis of an Advanced Life Support (ALS) Crop Cultured Under ALS Candidate Artificial Light Sources," *SAE Technical Paper* 1999-01-2107, 1999, <https://doi.org/10.4271/1999-01-2107>.

30. Stutte, G. and G. Goins. Solid Matrices for Supporting Plant Growth in Space. HortScience June 1999 34:521
31. Goins, G.D., N.C. Yorio, R.M. Wheeler, D.G. Mortley, and P.A. Loretan. 1999. Hydroponic nutrient solution management strategies for optimizing yield of sweetpotato storage roots. Soc. Automotive Eng. Tech. Paper 1999-01-2022.
32. Goins, G., Stutte, G., and Chapman, D. 1999. Designing experiments for direct measurement of wheat photosynthesis in microgravity. SAE Technical Paper 1999-01-2179.
33. Yorio, N.C., G.W. Stutte, G.D. Goins, D.S. de Villiers, and R.M. Wheeler, 1999. Effects of Planting Density and Short-term Changes in Photoperiod on the Growth and Photosynthesis of Two Cultivars of Bean (*Phaseolus vulgaris* L.) HortScience 34:497
34. Sager, and G.W. Stutte 1998. Blue light requirements for crops plants used in bioregenerative life support systems. J. Life Support and Biospherics. 5:119-128.
35. Cook, M.E., J.L. Croxdale, T.W. Tibbitts, G.D. Goins, C.S. Brown, and R.M. Wheeler. 1998. Development and growth of potato tubers in microgravity. Advances in Space Research. 21:1103-1110.
36. Goins, G.D., N.C. Yorio, and H. Vivenzio. 1998. Performance of salad-type plants using lighting and nutrient delivery concepts intended for space flight. Society of Automotive Eng. Transactions- Journal of Aerospace- 107:284-289.
37. Goins, G.D., N.C. Yorio, M.M. Sanwo, and C.S. Brown. 1998. Life cycle experiments with *Arabidopsis* grown under red light-emitting diodes (LEDs). Life Support and Biospherics. 5:143-149.
38. Yorio, N.C., R.M. Wheeler, G.D. Goins, M.M. Sanwo-Lewandowski, C.L. Macowiak, C.S. Brown, J.C. Sager, and G.W. Stutte. 1998. Blue light requirements for crop plants used in bioregenerative life support systems. Life Support and Biospherics. 5:119-128.
39. Goins, G.D., Yorio, N.C., and Vivenzio, H. 1998. Performance of salad-type plants using lighting and nutrient delivery concepts intended for spaceflight. Journal of Aerospace 107:284-289.
40. Goins, G.D., N.C. Yorio, M.M. Sanwo, and C.S. Brown. 1997. Photomorphogenesis, photosynthesis, and seed yield of wheat plants grown under red light-emitting diodes (LEDs) with and without supplemental blue lighting. Journal of Experimental Botany. 48:1407-1413.
41. Goins, G.D., J.D. Carr, H.G. Levine, R.M. Wheeler, C.L. Mackowiak, and D.W. Ming. 1997a. Comparison studies of candidate nutrient delivery systems for plant cultivation in space. SAE International Technical Paper # 972304.
42. Goins, G.D., H.G. Levine, C.L. Mackowiak, R.M. Wheeler, J.D. Carr, and D.W. Ming. 1997b. Comparison studies of candidate nutrient delivery systems for plant cultivation in space. Soc. Automotive Eng. Tech. Paper 972304.
43. Goins, G.D., and M.P. Russelle. 1996. Fine root demography in alfalfa (*Medicago sativa* L.). Plant and Soil 185:281-291.
44. Goins, G. D., D. A. Danehower, and A. R. Butler. 1993. Influence of method and degree of sucker control on the concentration of divatrienediols in *Nicotiana tabacum* L. Tobacco Science 37:78-83.

Invited Conference Speeches, Keynote Addresses and Symposium Proceedings

1. Goins, G.. and M. Blevins “The Small Farms Resource Innovation Center (SFRIC), ARD Atlanta, GA April 5, 2022
2. Goins, G.D. and M.A. Smith “Teaching Computation in the Sciences Using MATLAB,” Carleton, College, North Field, MN Oct 23, 2016
3. Goins, G.D. Massachusetts Bay Community College “iBLEND: An Initiative to Broaden Diversity in Undergraduate Biomathematics Training- : How to Start Transdisciplinary Initiatives in STEM”.
4. Gregory Goins. “iBLEND: An Initiative to Broaden Diversity in Undergraduate Biomathematics

- Training”. The White House. White House Champion of Change for HBCUs Panel. Washington, D.C. February 24, 2015.
5. Gregory Goins. “Improving the Undergraduate STEM Experience” National Academy of Sciences building, 2101 Constitution Ave., N.W. Washington, D.C. March 13-14, 2014.
 6. Gregory Goins. “Blending Undergraduate Research Experiences and Curricula: A Way Forward to Enter the Computational Biology Gateway”. Annual Biomedical Research Conference for Minority Students Conference, Nashville, TN Nov. 13-16 2013.
 7. Gregory Goins. “iBLEND: An Initiative to Broaden Diversity in Undergraduate Biomathematics Training”. Bridging the Gap. Uniting NC K-16 STEM Education. Oct 23-24, 2012. Raleigh, NC. Gregory Goins. “Translating Life Support for Space Exploration Research into Meaningful Experiences for Underserved Students”. NSF Directorate for Biological Sciences (BIO). January 2011.
 8. Gregory Goins. “Using Light-Emitting Diodes as a Primary Photosynthetic Light Source in Controlled Growth Environments.” International Seminar on NFT growing of lettuce and herbs. Vegetable Research Station Sint-Katelijne-Waver, Belgium. Oct 6-8, 2010.
 9. Gregory Goins and Mingxiang Chen. 2010. Understanding the hemoglobin bio-molecular oxygen curve via mathematics. Math Colloquium. Marteen Hall, April 1, 2010.
 10. Gregory Goins, C. Dinitra White, Vinaya Kelkar, Mary A. Smith, Thomas C. Redd, Dominic P. Clemence and Mingxiang Chen. “Forming a Biomathematical Learning Alliance Across Academic Departments”. Lilly Conference on College and University Teaching. Millennial Learning: Teaching in the 21st Century. February 20, 2009. Koury Convention Center. Greensboro, NC
 11. G.D. Goins, C.D. White, D.B. Foushee, M.A. Smith, J.J. Whittaker, and G.S. Byrd. “A Successful Model for Retaining Freshmen Students Using Online Learning Modules”. 10th Annual Teaching and Learning with Technology Conference. UNC TLT Collaborative. April 11, 2009. Raleigh, NC
 12. Gregory Goins, North Carolina A&T Univ., Dept. of Mechanical Engineering., “Plants for long term space missions: Life support and psychological benefits”. March 2009.
 13. Gregory Goins, North Carolina A&T Univ., School of Agriculture and Environmental Sciences Dept. “Breaking unplowed ground: Professional development as a tool for opening the doors of success” Keynote address for the Minorities in Agriculture, Natural Resources and Applied Science (MANNRS) Region II Workshop.
 14. Gregory Goins. “Approaches to education, teaching, and what works and what doesn't”. Institutional Research and Academic Career Development IRACDA Conference June 9, 2008. Chapel Hill, NC
 15. Gregory Goins. 12th CUR National Conference. Frontiers and Challenges in Undergraduate Research. Joseph Conference on Undergraduate Education (CUR). College of Saint Benedict/St. June 23, 2008. Minneapolis, MN.
 16. Goins, G., and M. Smith. “A biomathematical learning enhancement program at NC A&T”. Computing and Informatics UNC-Charlotte. Bioinformatics Research Center. February 29, 2008.
 17. Goins, G. and Clemence, D.P. “Forming a biomathematical learning alliance across disciplines”. College of Arts & Sciences Math Awareness Day 2008. NC A&T State Univ. Greensboro, NC.
 18. Goins, G., C. White, M. Chen, V. Kelkar, D. Clemence, and M. Smith. “A BLEND for Biomathematics”. UNC Teaching and Learning with Technology Conference for Creative Combinations for Learning in North Carolina. Raleigh, N. C. March 12-14, 2008.
 19. Goins, G. “An Excel Model for Diabetes”. A learning module for the Computational Science Education Reference Desk (CSERD) National Science Digital Library (NSDL). Instructor: MAA PREP / National Computational Science Inst. (NCSI) Workshop June, 2007 at Sweet Briar College, VA.
 20. Goins, G. and M. Smith. “Molecular analysis of photosynthetic acclimation to altered spectral quality”. American Society of Plant Biologists & Annual Meeting. Chicago, IL. July 7-11, 2007.
 21. Gregory Goins. “A Biomathematical BLEND at NC A&T State University”. Mathematical

- Association of American. MathFest 2007. August 15, 2007. San Jose, CA
22. Gregory Goins, "Cooperative ligand binding by hemoglobin, a visualization of bio-molecular protein function, using Excel" Institute for Mathematical Biology Education and Resources Timber: A Conference on Quantitative Biology Appalachian State Univ., June 2007
 23. Goins, G. D., N. C. Yorio, M. M. Sanwo, and C. S. Brown. Seed-to-seed growth of wheat and Arabidopsis using red light-emitting diodes. Poster presented at the 11th Annual Meeting for the American Society for Gravitational and Space Biology, Washington D.C., October, 1995, ASGSB Bulletin 9:134.
 24. Russelle, M.P. and G. D. Goins. Fine root demography in alfalfa (*Medicago sativa* L.) Invited paper at the minirhizotron workshop of the Swedish University of Agricultural Sciences. Båstad, Sweden. September, 1995.
 25. Goins, G. D., and N. C. Yorio. Seed-to-seed growth of wheat and Arabidopsis using LEDs. Presented at the First Annual NASA KSC/EPCOT Center Light Emitting Diode Symposium, Hanger Little L, June, 1995.
 26. Goins, G.D., N.C. Yorio, M.M. Sanwo, and C.S. Brown 1996. "Photomorphogenesis, photosynthesis, and seed yield of wheat plants grown under red light-emitting diodes (LEDs) with and without supplemental blue lighting" October 1996, Charlotte, N.C. American Society for Gravitational and Space Biology Bulletin 10(1):13.
 27. Sanwo, M.M., G. D. Goins, N. C. Yorio, and C. S. Brown. Effect of red light-emitting diodes on photosynthesis and carbohydrate metabolism in Superdwarf wheat plants. Poster presented at the 11th Annual Meeting for the American Society for Gravitational and Space Biology, Washington D.C., October, 1995, ASGSB Bulletin 9:90.
 28. Goins, G.D., M.M. Sanwo, N.C. Yorio, and C.S. Brown 1996. "Photosynthesis, growth, and seed yield of superdwarf wheat under red light-emitting diodes". Annual meeting of the American Society of Plant Physiologists. San Antonio, TX July 27-31. Plant Physiology 111(2):78 Abstract 251.
 29. Goins, G.D., K.M. Davis, M.M. Sanwo, E.C. Stryjewski, B.C. Piastuch, and S. Maxwell. 1996 Space Life Sciences Training Program: Space Biology Section October 1996, Charlotte, N.C American Society for Gravitational and Space Biology Bulletin 10(1):26.
 30. Goins, G.D., J.D. Carr, H.G. Levine, R.M. Wheeler, C.L. Mackowiak, and D.W. Ming. 1997. Comparison studies of candidate nutrient delivery systems for plant cultivation in space. Presented at the 27th International Conference on Environmental Systems. Lake Tahoe, NV.
 31. Sanwo, M.M., G.D. Goins, N.C. Yorio and C.S. Brown. 1997. Changes in leaf carbohydrate metabolism in wheat plants grown under red and blue light. Poster presented at American Society of Plant Physiologists Meeting. Vancouver Canada.
 32. Goins, G.D., N.C. Yorio, H.R. Kagie, And R.M. Wheeler. 1998. Performance Of three species of salad-type plants grown under narrow-spectrum light-emitting diodes (LEDs) in a controlled environment. Presented at the American Society of Horticultural Science Meeting. Orlando, FL.
 33. Goins, G. D., N. C. Yorio, M. M. Sanwo, and C. S. Brown. 1998. Life Cycle Experiments with Arabidopsis Grown Under Red Light-Emitting Diodes (LEDs). Presented at the Third International Conference Life Support And Biosphere Science. Lake Buena Vista, Florida.
 34. Mackowiak, C.L., C.F. Atkinson, G.D. Goins, and C.A. Loader. Evaluation of composted crop residues as a substrate and source of nutrients for food production in ALS. Presented at the Third International Conference Life Support And Biosphere Science. Lake Buena Vista, Florida.
 35. Goins, G.D., N.C. Yorio, R.M. Wheeler, D.G. Mortley, and P.A. Loretan. 1999. Hydroponic nutrient solution management strategies for optimizing yield of sweetpotato roots. Presented at the International Conference on Environmental Systems. Denver, Colorado.
 36. Goins, G.D., G.W. Stutte, and D.K. Chapman. 1999. Designing experiments for direct measurement of wheat photosynthesis in microgravity. Presented at the International Conference on

- Environmental Systems, Denver, Colorado.
37. Johnson, C.F. and G.D. Goins. Spinach: Nitrate Analysis of an Advanced Life Support (ALS) Crop Cultured under ALS Candidate Artificial Light Sources. 1999. Presented at the International Conference on Environmental Systems. Denver, CO.
 38. Ciolkosz, D.E. and G.D. Goins. Evapo-transpiration by salad crops in controlled environments. 16th Annual Meeting of American Society for Gravitational and Space Biology (ASGSB). Montreal, QC, Canada. Abstract #80. 2000.
 39. Goins, G.D. and N. C. Yorio, Spinach growth and development under innovative narrow- and broad-spectrum lighting sources. Presented at the 30th International Conference on Environmental Systems, Toulouse, France.
 40. Goins, G.D., N. C. Yorio, and L.V. Lewis. 2000. Comparison of spinach growth and development under broad- and narrow-spectrum lighting sources, Presented at the 97th International Conference of the American Society for Horticultural Science, Lake Buena Vista, Florida.
 41. Stutte, G.W. O. Monje, G.D. Goins, and D.K. Chapman. 2000. Measurement of gas exchange characteristics of developing wheat in the biomass production system, Presented at the 30th International Conference on Environmental Systems, Toulouse, France.
 42. Monje, O., G.D. Goins, H.G. Levine, and G.W. Stutte. 2000. Controlling Crop Growth Media Moisture with Sensors, Presented at the 97th International Conference of the American Society for Horticultural Science, Lake Buena Vista, Florida.
 43. Sager, J., G. Goins, S. Young, and C. Paty 2000. Candidate lighting technologies for Advanced Life Support Biomass Production. Presented at the 4th Annual Life Support and Biospherics Conference. Baltimore, Maryland.
 44. Sager, J., G. Goins, S. Young, and C. Paty. 2000. Electric and radiant energy conversion efficiencies of candidate plant lighting technologies for NASA's Advance Life Support Program . Presented at the 4th Annual Life Support and Biospherics Conference. Baltimore, Maryland.
 45. Goins, G.D. 2000. Performance of salad-type plants grown under narrow-spectrum LEDs in a controlled environment. Presented at the 4th Annual Life Support and Biosphere Sciences Conference. Baltimore, Maryland.
 46. Sager, J.C., G.D. Goins, S. Young, and C. Paty. 2000. Candidate lighting technologies for advanced life support biomass production. Presented at the 4th Annual Life Support and Biosphere Sciences Conference. Baltimore Maryland.
 47. Goins, G.D. Agriculture in Space. Presented at the University of Florida Ag-In-The-Classroom, Inc. Project, Food, Land and People Workshop. Sponsored by the Brevard County Cooperative Extension Service. September 18, 2000.
 48. Goins, G.D. 2001. Performance of salad-type plants grown under narrow spectrum LEDs in a controlled environment. 2001. Presented at the Bioastronautics Investigators' Workshop. Galveston, Texas.
 49. Sager, J.C., R.M. Wheeler, G.D. Goins, and J.S. Young. 2001. Lighting technology development for bioregenerative components of the Advanced Life Support Project. Presented at the Bioastronautics Investigators' Workshop. Galveston, Texas.
 50. Styjewski, E. C. Kelly, and G. Goins. 2001. Quantitative morphological analysis of spinach leaves grown under light-emitting diodes or sulfur-microwave lamps. Presented at the 31st International Conference on Environmental Systems and the 8th European Symposium on Space Environmental Control Systems. Orlando, Florida.
 51. Goins, G.D., R.M. Wheeler, J.C. Sager, N.C. Yorio, and L.M. Ruffe. 2001. Salad crop production under different wavelengths of red light-emitting diodes (LEDs). Presented at the 31st International Conference on Environmental Systems and the 8th European Symposium on Space Environmental Control Systems. Orlando, Florida.
 52. Goins, G.D., G.W. Stutte, R.M. Wheeler, and J.C. Sager. Light interception and canopy coverage of

lettuce and radish grown under different wavelengths of red-light emitting diodes (LEDs). Joint international meeting of the UK CEUG and North American NCR-101 9th - 12th September, 2001 at the John Innes Centre, Norwich, UK

53. Goins, G.D. 2002. Growth, stomatal conductance, and leaf surface temperature of Swiss chard grown under different artificial lighting technologies. Presented at the 32nd International Conference on Environmental Systems. San Antonio, Texas.
54. Kim, H.H., G. D. Goins, R.M. Wheeler, and J.C. Sager. 2003. Growth and Photosynthesis of lettuce grown under red and blue light-emitting diodes (LEDs) with supplemental green light. Presented at the 100th ASHS Annual International Conference, October 3-6, 2003 in Providence, Rhode Island.
55. Kim, H.H., G. D. Goins, R.M. Wheeler, and J.C. Sager. 2003. A Comparison of Growth and Photosynthetic Characteristics of lettuce grown under red and blue light-emitting diodes (LEDs) with and without Supplemental Green LEDs. Presented at the Annual Meeting of the American Society of Plant Biologists, July 25-30, 2003 in Honolulu, Hawaii.
56. Goins, G. D., M.M. Lewandowski, N.C. Yorio, R.M. Wheeler, and J.C. Sager. Photosynthetic gas exchange and chloroplast fluorescence characteristics in wheat leaves developed under narrow-spectrum light-emitting diodes. 2003. Presented at the Annual Meeting of the American Society of Plant Biologists, July 25-30, 2003 in Honolulu, Hawaii.
57. G W. Stutte, O. A. Monje, G. D. Goins, and S. Anderson. 2003. Use of Telescience To Remotely Monitor And Control Wheat Growth Onboard The International Space Station. To be presented at the American Society for Horticultural Science Meeting. Providence, Rhode Island.
58. Yorio, N.C., G.D. Goins, R.M. Wheeler, and G.W. Stutte. 2003. Regulation of biomass partitioning in hydroponically-grown potato by altering nitrogen concentrations. Presented at the Plant Growth Regulator Society of America. 2003. Vancouver, Canada.

Pending, Active, and Recent USDA/Agriculture Competitive Awards

Competitive Grant Awards at NCA&T	Award Amount	PI	Sponsor	Co-PI	Project End Date
CROPS NSF Innovation Type 1 Engine	\$1,000,000	Goins, Gregory	NSF	Duke, UNC, NCSU, ECU	Awarded Fall 2023
The beCAROLINE Coordination Hub (BECCH) OPPE	\$748,000	Goins, Gregory	USDA OPPE	Blevins, M.	9/30/2025
Partnership to Enhance Academic Performance of Students majoring in Biological and Agricultural Engineering	\$750,000	Goins, Gregory	NRCS	Aryal, N.	8/31/2025
NCA&T Resource Innovation Center for Outreach, Education, and Technical Assistance for Farm Service Agency Programs	\$100,000	Goins, Gregory	USDA FSA	N/A	9/30/2022
NSF Convergence Accelerator for Digital Agriculture	\$100,000	Reecy, James	NSF	Goins, Gregory	08/31/2022
NSF INCLUDES: Building Diverse and Integrative STEM Continua	\$199,940	Gregory Goins	NSF	Jackson, Caesar	9/30/2018
Enhancing Bioscience and Engineering Education through Curriculum Integration	\$249,831	Joe Whitehead	NSF	Goins, Gregory	9/30/2016

Assisting Bioinformatics Efforts at Minority Schools	\$36,269	Gregory Goins	NIH	Harrison, Scott	1/31/2016
MRI: Acquisition of a Complete High-Performance Modeling and Visualization	\$355,758	Mingxiang Chen	NSF	Goins, Gregory	8/31/2015
Enhancing Bioscience and Engineering Education through Curriculum Integration	\$749,493	Whitehead, Joe	NSF	Goins, Gregory	9/30/2015
Enhancing Bioscience and Engineering Education through Curriculum Integration	\$249,831	Whitehead, Joe	NSF	Goins, Gregory	9/30/2015
MRI: Acquisition of a Complete High-Performance Modeling and Visualization	\$355,758	Lin, Yuh Lang	NSF	Goins, Gregory	8/31/2015
The Center for the Study of Evolution in Action (BEACON)	\$250,000	Dozier, Gerry	NSF BEACON	Goins, Gregory	1/31/2015
The Center for the Study of Evolution in Action (BEACON)	\$500,000	Dozier, Gerry	NSF BEACON	Goins, Gregory	1/31/2016
The Center for the Study of Evolution in Action (BEACON)	\$500,000	Dozier, Gerry	NSF BEACON	Goins, Gregory	1/31/2017
The Center for the Study of Evolution in Action (BEACON)	\$250,000	Dozier, Gerry	NSF BEACON	Goins, Gregory	1/31/2018
The Center for the Study of Evolution in Action (BEACON)	\$282,068	Dozier, Gerry	NSF BEACON	Goins, Gregory	1/31/2019
Integrating NASA Science, Technology and Research in Undergraduate Curriculum an	\$90,800	Kelkar, Ajit	NASA	Goins, Gregory	3/31/2017
Integrating NASA Science, Technology and Research in Undergraduate Curriculum an	\$258,724	Kelkar, Ajit	NASA	Goins, Gregory	3/31/2016
Integrating NASA Science, Technology and Research in Undergraduate Curriculum an	\$334,971	Kelkar, Ajit	NASA	Goins, Gregory	3/31/2015
Integrating NASA Science, Technology and Research in Undergraduate Curriculum an	\$364,077	Kelkar, Ajit	NASA	Goins, Gregory	3/31/2014
Assisting Bioinformatics Efforts at Minority Schools	\$36,269	Goins, Gregory	NIH	Chen, Mingxiang	1/31/2017
Assisting Bioinformatics Efforts at Minority Schools	\$36,269	Goins, Gregory	NIH	Smith, Mary	1/31/2016
Assisting Bioinformatics Efforts at Minority Schools	\$36,269	Goins, Gregory	NIH	White, Catherine	1/31/2015
Assisting Bioinformatics Efforts at Minority Schools	\$36,269	Goins, Gregory	NIH	Chen, Mingxiang	1/31/2014
iBLEND: An Integrative Biomathematical Learning Enhancement Network for Diversity	\$240,000	Goins, Gregory	NSF	White, Catherine	8/31/2013

Cooperative Biomathematical Research And Training For Undergraduates At NCAT	\$240,000	Goins, Gregory	NSF	Chen, Mingxiang	8/31/2009
Improving And Expanding Student Experiences in Introductory Biology Courses With Online Learning Modules (Olms)	\$99,173	Goins, Gregory	NSF	Byrd, G.	7/31/2007