

PAMELA DEKLE TWIGG

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ACADEMIC SPECIALTIES

- The focus of my research is on the correlation between the functions and mechanisms of protein molecules and their three-dimensional structure. In particular I am interested in examining the nature of protein-protein interactions utilizing x-ray crystallography and NMR spectroscopy.

EDUCATION

- 1996-2001. Ph.D., Molecular Biophysics, Florida State University, Tallahassee, FL
Thesis Title: Crystallographic and Spectroscopic Investigations into Mechanisms for Regulation of Diphtheria Toxin Repressor Activity
Thesis Advisor: Dr. Donald L. D. Caspar
- M.S., Biomedical Engineering, University of Alabama at Birmingham, Birmingham, AL
- B.S., Chemical Engineering, Auburn University, Auburn, AL

EXPERIENCE

- **Lecturer**
Dept. of Chemistry, University of Alabama in Huntsville, Huntsville, AL
August 2014 to present.
- **Associate Scholar/Scientist**
Dept. of Chemistry and Biochemistry, Florida State University, Tallahassee, FL
August 2011 to August 2014.
Research in metabolomics of cancer and neurodegenerative diseases, utilizing GC-MS for data analysis.
- **Research Assistant Professor**
Dept. of Chemistry, University of Alabama in Huntsville, Huntsville, AL
June 2004 to present.
Appointed Graduate Faculty, Fall 2004
Appointed Adjunct Biology Faculty, Spring 2005
- **Chemist II**
October 2001 to June 2004.
Research into the structural characterization of proteins related to Huntington's Disease, using x-ray crystallography, NMR spectroscopy, as well as other biophysical techniques. Also involved in research examining the metal-binding and structural properties of diphtheria toxin repressor protein and related homologs.

- **Research Associate**

Institute for Molecular Biophysics, Florida State University, Tallahassee, FL
April 1996 to April 1999.

Responsibilities included purification, characterization, and crystallization of diphtheria toxin repressor protein, crystallization and x-ray data collection on collagen-like peptides, organization and management of protein crystallization lab.

- **Senior Research Associate**

Universities Space Research Association (USRA), Huntsville, AL
February 1995 to March 1996.

- **Microgravity Science Research Associate, USRA**

July 1994 to February 1995.

- **Visiting Scientist, USRA**

September 1988 to July 1994.

Employed in the NASA Biophysics Branch of Space Sciences Lab, Marshall Space Flight Center. Responsibilities included protein crystal growth research, assisting with collection and analysis of x-ray crystallographic data, experiments involving growth of protein crystals in Space Shuttle flight hardware, coordinating outside co-investigator participation and general laboratory management duties.

- **Research Analyst II**

Department of Chemistry, University of Alabama in Huntsville, Huntsville, AL
September 1985 to September 1988.

Responsibilities included research involving protein crystal growth and investigations of the related physical chemistry, general laboratory management duties, and supervision of undergraduate student research.

TEACHING EXPERIENCE

Courses Taught – University of Alabama in Huntsville

- CH 121 General Chemistry I
- CH 123 General Chemistry II
- CH/BYS 301 Elementary Biochemistry
- CH/BYS 361 Biochemistry I
- CH/BYS 362 Biochemistry I Laboratory
- CH/BYS 363 Biochemistry II, Guest Lecturer
- CH 480 Selected Topics in Chemistry
- BYS 492 Undergraduate Research
- CH 493 Intro to Chemical Research
- H 499 Honors Senior Project
- CH 561/BYS 547 Graduate Biochemistry I, Guest Lecturer
- BYS 691 Special Topics in Structural Biology
- BYS 692 Research
- BYS 699 Master's Thesis
- CH 700 Current Topics in Chemistry
- CH 765 Special Topics in Structural Biology
- CH 765 Special Topics: Biochemical Methods
- CH 765 Special Topics: Enzyme Inhibition
- CH 765 Special Topics: Introduction to NMR Theory

Additional Teaching

- **MCAT Review**, University of Alabama in Huntsville

Developed and presented a 4-hour review of General Chemistry topics for pre-professional students. January 2016.

- **National Youth Science Camp**, Bartow, WV
Developed and presented 3-day Directed Studies in Structural Biology.
Summer, 1995-1999, 2001-2015 - average of 8-15 students per workshop.
- **AP Biology**
Developed, wrote, and implemented two laboratory exercises covering enzyme catalysis (as a replacement for AP Biology Lab #2) and bacterial transformation and restriction enzyme digest (as a replacement for AP Biology Lab #6) at six local high schools. This was in conjunction with the Partnership for Biotechnology Research (PBR) and the Hudson/Alpha Institute for Biotechnology. Fall 2006 - Spring 2011
- **Sally Ride Festival**
Developed and taught a workshop on enzyme catalysis titled "In a Hurry? Try Enzymes!" for middle-school aged students at the Sally Ride Festival held on the UAHuntsville campus. Fall 2006, Fall 2007

Graduate Student Committees

- **Jorge Barcena**, M.S. Biology, 2004.
- **Natalie Kirkland**, Ph.D. Biotechnology.
- **Miranda Byrne**, Ph.D. Biotechnology, 2009.
- **Hind El Mubarek**, M.S. Biology, 2008.
- **Sanchali Ghosh**, M.S. Biology, 2008.
- **Donna Hockman**, M.S. Biology, 2009.
- **Gokul Turaga**, Ph.D. Biotechnology, 2012.
- **Ronny Hughes**, Ph.D. Biotechnology, 2011.
- **Joy Agee**, M.S. Biology, 2010.
- **Can Grace Tan**, M.S. Chemistry, 2010.
- **Victor Ogungbe**, Ph.D. Biotechnology, 2011.
- **Ranjani Balaraju**, M.S. Biology.
- **Li Qiu**, Ph.D. Biotechnology, Fall 2011.
- **Manavalan Gajapathy**, Ph.D. Biotechnology.

Student Advising

- **Brooke Belyea**, B.S. Chemistry
- **Justin Flatt**, B.S. Chemistry
- **Joshua Berry**, B.S. Chemistry
- **Josh King**, B.S. Chemistry
- **Nicholas Arnet**, B.S. Chemistry
- **Shea Connell**, B.S. Chemistry
- **Kirby Wallace**, B.S. Chemistry, B.S. Biology

Graduate Student Research Supervision

- **Jorge Barcena**, M.S. Biology, 2004.
- **Talitha Caudle**, M.S. Biology, 2007. Ph.D. Biotechnology.
- **Randall Wilson**, M.S. Chemistry, 2007. Ph.D. Biotechnology, 2011.
- **Chris James**, M.S. Chemistry, 2013
- **Ferdousi Khan**, M.S. Chemistry, 2009.
- **Karen Hunnicutt**, M.S. Biology.
- **Amicia Elliott**, M.S. Biology, 2009.
- **Hilary Wright**, (rotation) Ph.D. Biotechnology.
- **Emily Gordon** (with Dr. Edward Meehan), Ph.D. Biotechnology.

- **Mariana Rangelova** (with Dr. Bernhard Vogler), M.S. Chemistry, 2008.
- **Caitlin Deskins** (with Dr. William Setzer), Ph.D. Biotechnology, 2013.
- **Kimberli Helms** (with Dr. William Setzer), M.S. Chemistry, 2012.
- **Venkatesh Ekambaram**, M.S. Biology.
- **Ryan Andreozzi**, (with Dr. William Setzer), M.S. Chemistry.
- **Justin Dimmock**, (with Dr. William Setzer), M.S. Chemistry.
- **Josh King**, M.S. Biology.
- **David Jackson**, (with Dr. William Setzer), M.S. Chemistry.
- **Nandita Saha**, M.S. Biology.
- **Ruchi Bhatt.**, M.S. Biology, 2012.

Undergraduate Student Research Supervision

- **Sean McConnell**, B.S. Chemistry
- **Brooke Belyea**, B.S. Chemistry
- **Rashi Singhal**, Summer REU Research Student
- **Tadeusz Ciszak**, Summer REU Research Student
- **Emad Elsamadicy**, Summer REU Research Student
- **Thomas Spain**, B.S. Physics
- **Justin Richmond**, B.S. Chemistry
- **Thomas Savage**, B.S. Biology
- **Justin Flatt**, B.S. Chemistry
- **Stefan Brzezinski**, B.S. Chemistry
- **David Brown**, B.S. Chemistry
- **Chase Gamwell**, B.S. Chemistry
- **Joshua King** (Zhan Scholar), B.S. Chemistry
- **Michelle Watters**, B.S. Chemistry
- **James Lawlor**, B.S. Chemistry
- **Kimberli Helms**, B.S. Chemistry
- **Rosemary Puckett**, Non-degree.
- **James Wolfsberger**, B.S. Chemistry
- **Reah Lee**, B.S. Chemistry
- **Caitlin Allison**, B.S. Chemistry
- **Stephen Layne**, B.S. Chemistry
- **Alicia Caudle**, B.S. Chemistry
- **David Jackson**, B.S. Chemistry

Student Intern Research Supervision

- **Marianne Smith**, B.S. Biotechnology, Calhoun College.

SERVICE ACTIVITIES

- **Journal Article Reviewer** - *Acta Crystallographica F Biological Crystallography*, 2002 – present.
- **Journal Article Reviewer** - *Biochemistry*, 2010 – present
- **Journal Article Reviewer** – *Nature Oncology*, 2011 – present
- **Treasurer**, National Youth Science Camp Alumni Association, 2010 - 2011
- **Board of Directors**, Partnership for Biotechnology Research, Huntsville, AL, Jan. 2009 - 2014

- **Steering Committee**, Partnership for Biotechnology Research, Huntsville, AL, 2004 - 2011
- **APPLE (Advanced Placement Program for Learning Enhancement)**, Partnership for Biotechnology Research, Huntsville, AL, 2006 – present
- **University of Alabama System Honors Research Conference**, Judge, 2010
- **Alabama Louis Stokes Alliance for Minority Participation Annual Research Conference**, Judge, 2010
- **Science Olympiad**, Event Coordinator, UAHuntsville Tournament, 2005-2011, 2015-2016
- **North Alabama Regional Science and Engineering Fair**, Judge, 2005-2010
- **Alabama State Science and Engineering Fair**, Judge, 2006, 2010
- **Sally Ride Science Festival**, Organized an exhibit to represent the Laboratory for Structural Biology and the Alabama High Field NMR Laboratory, Conducted a workshop on Enzyme Catalysis for middle-school students, 2006-2007
- **National Junior Science and Humanities Symposium**, Judge, 2007.
- **Radiation Safety Committee**, UAHuntsville, 2004-2011
- **Emergency Supervisor for LSB**, UAHuntsville, 2006-2011
- **Departmental Advisor for Undergraduate Chemistry Majors**, Chemistry Dept., UAHuntsville
- **Departmental Committee for Identification of PASS Leaders**, Chemistry Dept., UAHuntsville
- **Departmental Representative**, College Visit Days, UAHuntsville
- **Departmental Space Advisory Committee**, Chemistry Dept., UAHuntsville
- **Committee to Evaluate Departmental Operating Paper**, Chemistry Dept., UAHuntsville
- **Committee to Review Course Requirements for Master's Degree in Chemistry**, Chemistry Dept., UAHuntsville
- **Biosciences Retreat Organization Committee**, Biotechnology Ph.D. Program, UAHuntsville

AWARDS

- **Michael Kasha Student Publication Award**, Florida State University, 2004
- **National Science Foundation Research Training Grant**, 1999-2001
- **NASA Group Achievement Award - Protein Crystal Growth Team**, 1994
- **NASA Certificate of Appreciation**, 1993
- **UAB Engineering Scholarship**, 1983-84

SELECTED PUBLICATIONS

1. Helms, K. M., Wilson, R. C., Ogungbe, I. V., Setzer, W. N., and **Twigg, P. D.** 2011. "Vitexin Inhibits Polyubiquitin Synthesis by the Ubiquitin-conjugating Enzyme E2-25K." *Natural Product Communications*, **6(10)**, 1411-1416.
2. Wilson, R. C., Edmondson, S. P., Flatt, J. W., Helms, K., and **Twigg, P. D.** 2011. "The E2-25K Ubiquitin-associated (UBA) Domain Aids in Polyubiquitin Chain Synthesis and Linkage Specificity." *Biochem. Biophys. Res. Com.*, **405(4)**, 662-666.
3. **Twigg, P. D.**, Lamb, N. E., DuBreuil, R. M., and Zahorchak, R. 2011. "APPLE for the Teacher: Scientists in the Classroom. From Grass Roots to Productive Orchard." *The American Biology Teacher*, **73(8)**, 444-448.
4. Wilson, R. C., Hughes, R. C., Flatt, J. W., Meehan, E. J., Ng, J. D., and **Twigg, P. D.** 2009. "The crystal structure of full-length ubiquitin-conjugating enzyme E2-25K (huntingtin-interacting protein 2)." *Acta Cryst.*, **F65**, 440-444.
5. Wilson, R. C., Hughes, R. C., Curto, E. V., Ng, J. D., and **Twigg, P. D.** 2007. "Backbone ^1H , ^{15}N , and ^{13}C Resonance Assignments and Secondary Structure of a Novel Protein OGL-20P^T-358 from Hyperthermophile *Thermococcus thio-reducens* sp. nov." *Molecules and Cells*, **24(3)**, 437-440.
6. **Twigg, P. D.**, Parthasarathy, Guerrero, G., L., Logan, T. M., and Caspar, D. L. D. 2001. "Disordered to Ordered Folding in the Regulation of Diphtheria Toxin Repressor Activity." *Proc. Natl. Acad. Sci. USA*, **98**, 11259-64.
7. Wang, G., Wylie, G. P., **Twigg, P. D.**, Caspar, D. L. D., Murphy, J. R., and Logan, T. M. 1999. "Solution Structure and Peptide Binding Studies of the C-Terminal SH3-Like Domain of the Diphtheria Toxin Repressor Protein." *Proc. Natl. Acad. Sci. USA*, **96**, 6119-6124.
8. **Twigg, P. D.**, Wylie, G. P., Wang, G., Caspar, D. L. D., Murphy, J. R., and Logan, T. M. 1999. "Expression and Assignment of the ^1H , ^{15}N , and ^{13}C Resonances of the C-terminal Domain of the Diphtheria Toxin Repressor." *J. Biomolecular NMR*, **13(2)**, 197-198.
9. Carter, D. C., Wright, B. S., Miller, T. Y., Chapman, J., **Twigg, P. D.**, Keeling, K. M., Moody, K., White, M., Click, J., Ruble, J. R., Ho, J. X., Adcock-Downey, L., Bunick, G., and Harp, J. 1999. "Diffusion-controlled crystallization apparatus for microgravity (DCAM): flight and ground-based applications." *J. Crystal Growth*, **196**, 602-609.
10. Carter, D. C., Wright, B. S., Miller, T. Y., Chapman, J., **Twigg, P. D.**, Keeling, K. M., Moody, K., White, M., Click, J., Ruble, J. R., Ho, J. X., Adcock-Downey, L., Dowling, T., Chang, C.-H., Ala, P., Rose, J., Wang, B. C., Declerq, J.-P., Evrard, C., Rosenberg, J., Wery, J.-P., Clawson, D., Wardell, M., Stallings, W., and Stevens, A. 1999. "PCAM: a multi-user facility-based protein crystallization apparatus for microgravity." *J. Crystal Growth*, **196**, 610-622.

11. Carter, D. C., Lim, K., Ho, J. X., Wright, B. S., **Twigg, P. D.**, Miller, T. Y., Chapman, J., Keeling, K. M., Ruble, J. R., Vekilov, P. G., Thomas, B. R., Rosenberger, F., and Chernov, A. A. 1999. "Lower dimer impurity incorporation may result in higher perfection of HEWL crystals grown in microgravity. A case study." *J. Crystal Growth*, **196**, 623-637.
12. Wardell, M. R., Skinner, R., Carter, D. C., **Twigg, P. D.**, & Abrahams, J.-P. 1997. "Improved diffraction of antithrombin crystals grown in microgravity." *Acta Cryst.D*, **53**, 622-625.
13. Ho, J.X., Holowachuk, E.W., Norton, E.J., **Twigg, P.D.**, and Carter, D.C. 1993. "X-ray and Primary Structure of Horse Serum Albumin (*Equus caballus*) at 0.27-nm Resolution." *Eur. J. Biochem.*, **215**, 205-212.
14. Carter, D.C., He, X.-M., **Twigg, P.D.**, and Casale, E. 1990. "Drug Binding to Human Serum Albumin: Functional and Therapeutical Implications." *Technology 2000 Proceedings*, Washington, D.C., November 27-28, 1990.
15. DeLucas, L.J., Smith, C.D., Ealick, S.E., Carter, D.C., **Twigg, P.D.**, He, X.-M., Snyder, R.S., Weber, P.C., Schloss, V., Einspahr, H.M., Clancy, L.L., McPherson, A.M., Koszelak, S., Vandoselaar, M.M., Prasad, L., Quail, J.W., Delbaere, L., and Bugg, C.E. 1990. "Protein Crystal Growth Aboard the U.S. Space Shuttle Flights STS-31 and STS-32." *Advances in Space Research*.
16. Carter, D.C., He, X.-M., Munson, S.H., **Twigg, P.D.**, Gernert, K.M., Broom, M.B., and Miller, T.Y. 1989. "Three-Dimensional Structure of Human Serum Albumin." *Science*, **244**, 1195-1198.
17. Howard, S.B., **Twigg, P.D.**, Baird, J.K., and Meehan, E.J. "The Solubility of Hen Egg White Lysozyme." 1988. *J. Crystal Growth*, **90**, 94-104.
18. Fowles, W.A., DeLucas, L.J., **Twigg, P.D.**, Howard, S.B., Meehan, E.J., Jr., and Baird, J.K. 1988. "Experimental and Theoretical Analysis of the Rate of Solvent Equilibration in the Hanging Drop Method of Protein Crystal Growth." *J. Crystal Growth*, **90**, 117-129.
19. Baird, J.K., Frieden, R.W., Meehan, E.J., Jr., **Twigg, P.D.**, Howard, S.B., and Fowles, W.A. 1987. "Evaporation Kinetics in the Hanging Drop Method of Protein Crystal Growth." *Mat. Res. Soc. Symp. Proc.*, **87**, 231-237.
20. Baird, J.K., Frieden, R.W., Meehan, E.J., Jr., **Twigg, P.D.**, Howard, S.B., and Fowles, W.A. 1987. "Model for Determining Vapor Equilibration Rates in the Hanging Drop Method of Protein Crystal Growth." *Proc. 6th European Symposium on Material Sciences under Microgravity Conditions*, 391-394.

RECENT POSTERS/PRESENTATIONS

1. Twigg, P.D. "The Role of the Ubiquitin-binding Domain in E2-25K." Abbvie Pharmaceuticals, North Chicago, IL, June 11, 2013.
2. Morgan, T.J., Jr., Twigg, P.D., Gower-Winter, S., Schepkin, V., Logan, T., and Levenson, C. "Ultra-high field imaging, genomic and metabolomics analysis of chemotherapeutic resistant glioma cell lines." Poster presented at Society for Neuroscience Annual Meeting, New Orleans, LA, 2012.
3. Morgan, T.J., Jr., Twigg, P.D., Ozambela, M., Hagler, S., Gower-Winter, S., Logan, T., and Levenson, C. "Metabolomic analysis of drug resistance in an experimental model of glioma." Poster presented at FSU College of Medicine Research Fair, Tallahassee, FL, Feb. 2012.
4. Twigg, P. D. "Ubiquitin-binding Domains: What's a nice domain like you doing in a place like this?" Kasha Award Lecture, Florida State University, Tallahassee, FL, June 23, 2009.
5. Twigg, P. D. Invited spokesperson for Alabama EPSCoR program; met with Alabama representatives and senators, Washington, D.C., Feb. 23-25, 2009.
6. Cassidy, C. Twigg, P. D., Holmes-Caudle, T., and Setzer, W. N. "Inhibition of caspase-3 by isolates from *Lonchocarpus haberi* from Monteverde, Costa Rica." Poster presented at 7th Joint Meeting of AFERP, ASP, GA, PSE, & SIF Natural Products with pharmaceutical, nutraceutical, cosmetic, and agrochemical interest Athenaeum Intercontinental, Athens, Greece, 3-8 August 2008.
7. Flatt, J. W., Wilson, R. C., and Twigg, P. D. "Structural and Functional Analysis of E2-25K: A Ubiquitin Conjugating Enzyme." Poster presented at conclusion of Summer Research Experience for Undergraduates, UAH, August 2008.
8. Gordon, E., Wilson, R., Twigg, P. D., and Meehan, E. "NMR Structural Analysis of Rab9." Poster presented at the PBR/UAH Biosciences Retreat, HudsonAlpha Institute for Biotechnology, Huntsville, AL, September 2008.
9. Rangelova, M., Twigg, P. D., and Vogler, B. "Inhibition and Binding of Recombinant Cruzain by Natural Products using Fluorescence and NMR Spectroscopy." Poster presented at the PBR/UAH Biosciences Retreat, HudsonAlpha Institute for Biotechnology, Huntsville, AL, September 2008.
10. Twigg, P. D. "The Role of Structural Biology in Huntington's Disease Research." Seminar presented at Sewanee University of the South, Sewanee, TN, November 16, 2007.
11. Wilson, R., Edmondson, S., Flatt, J., Meehan, E., and Twigg, P. D. "Characterization of the UBA Domain of E2-25K, a Ubiquitin-conjugating Enzyme." Poster presented at

the 36th Southeastern Magnetic Resonance Conference, Tuscaloosa, AL, November 2007.

12. Wilson, R., Edmondson, S., Flatt, J., Meehan, E., and Twigg, P. D. "Characterization of the UBA Domain of E2-25K, a Ubiquitin-conjugating Enzyme." Poster presented at the National EPSCoR Annual Meeting, Kona, Hawaii, November 2007.
13. Johnston, B., Hunter, A., Twigg, P. D., and Zahorchak, B. "AppleTech Enzyme Catalysis Kit." Poster presented at the PBR/UAH Biosciences Retreat, Huntsville Botanical Gardens, Huntsville, AL, October 2007.
14. Flatt, J. W., Wilson, R. C., and Twigg, P. D. "Cloning and Expression of Monoubiquitin for Binding Studies with E2-25K." Poster presented at the PBR/UAH Biosciences Retreat, Huntsville Botanical Gardens, Huntsville, AL, October 2007.
15. Richmond, J., and Twigg, P. D. "Subcloning of Polyglutamine Binding Protein 1 (PQBP1), a Huntingtin-interacting Protein." Poster presented at conclusion of Summer Research Experience for Undergraduates, August 2007.
16. Wilson, R., Twigg, P., and Meehan, E. "Solution Structure for the UBA Domain of E2-25K, a Huntingtin-interacting Protein." Poster presented at the Alabama EPSCoR Annual Meeting, University of Alabama in Huntsville, February 2007.
17. James, C., Twigg, P., and Meehan, E. "The Expression, Purification, Crystallization, and Binding Partners of Optineurin." Poster presented at the Alabama EPSCoR Annual Meeting, University of Alabama in Huntsville, February 2007.
18. Caudle, T. H., Twigg, P., and Meehan, E. "Investigating Mechanisms of Caspase-3 Structure and Activation." Poster presented at the Alabama EPSCoR Annual Meeting, University of Alabama in Huntsville, February 2007.
19. Twigg, P. D. "Structural Biology at UAH: What's Happening in the Rocket City?" Seminar presented at Trevecca Nazarene University, Nashville, TN, November 16, 2006.
20. Caudle, T. H., Twigg, P. D., and Meehan, E. "Development of a Novel Expression System of p21 and Caspase-3: an Alternative Approach to Apoptosis Inhibition in Huntington's Disease." Poster presented at the UAH Biosciences Retreat, Monte Sano State Park, AL, September 2006.
21. James, C., Twigg, P. D., and Meehan, E. "Complexation of Optineurin, a Huntingtin-interacting Protein, with Vesicle Trafficking GTPase, Rab8." Poster presented at the UAH Biosciences Retreat, Monte Sano State Park, AL, September 2006.
22. Wilson, R., Twigg, P. D., Edmondson, S., and Meehan, E. "Solution Structure and Characterization of E2-25K, a Huntingtin-interacting Protein." Poster presented at the UAH Biosciences Retreat, Monte Sano State Park, AL, September 2006.

23. Twigg, P. D., Wilson, R., Edmondson, S., and Meehan, E. "Solution Structure and Characterization of E2-25K, a Huntingtin-interacting Protein." Poster presented at the Hereditary Disease Foundation annual meeting, "HD2006: Changes, Advances, and Good News", Boston, MA, August 2006.
24. Wilson, R., Twigg, P. D., and Meehan, E. "Backbone Assignments of E2-25K, a Huntingtin Interacting Protein, by High Resolution NMR Spectroscopy." Poster presented at the Alabama EPSCoR Annual Meeting, Tuskegee University, March 2006.
25. Caudle, T. H., Twigg, P. D., and Meehan, E. "Structural Studies of an Inactive Caspase-3 Mutant: A Plausible Route in the Search for Huntington's Disease Treatment." Poster presented at the Alabama EPSCoR Annual Meeting, Tuskegee University, March 2006.
26. James, C., Twigg, P. D., and Meehan, E. "Expression and Purification of Full-length and Truncated Optineurin, a Huntingtin-interacting Protein." Poster presented at the Alabama EPSCoR Annual Meeting, Tuskegee University, March 2006.
27. Wilson, R., Twigg, P. D., and Meehan, E. "Expression, Purification and Complexation of HIP2, a Huntingtin-interacting protein, with a Huntingtin N-terminal Fragment." Poster presented at the UAH Biosciences Retreat, Monte Sano State Park, AL, September 2005.
28. Caudle, T. H., Twigg, P. D., and Meehan, E. "Characterization of a Procaspase-3 mutant in efforts to design alternative therapies for Huntington's Disease." Poster and presentation given at the UAH Biosciences Retreat, Monte Sano State Park, AL, September 2005.
29. Ciszak, T., Elsamadicy, E., Twigg, P. D., and Meehan, E. "Huntingtin Protein and its Interactions: Expression and Purification of Rab8, a Membrane trafficking Protein Implicated in Huntingtin Transport." Poster presented at conclusion of Summer Research Experience for Undergraduates, August 2005.
30. Belyea, B. and Twigg, P. D. "Biophysical Characterization of Optineurin." Poster presented at the Sigma Xi Student Research Day, UAH, March 2005.
31. Holmes, T. and Twigg, P. D. "Characterization and Structural Studies of Two Caspase-3 Mutants as an Aid to Designing Therapies for Huntington's Disease." Poster presented at the Sigma Xi Student Research Day, UAH, March 2005.