

**Satyanarayana Swamy Mruthinti, Ph.D.**  
*Curriculum Vitae (updated February, 2017)*

**PERSONAL**

Title: Professor of Biology  
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**EDUCATION**

B.Sc. Andhra University, Waltair, India; Zoology, Botany and Chemistry; 1971-1974  
M.Sc. M.S. University, Baroda, India; Zoology; 1975-1977  
Ph.D. M.S. University, Baroda, India; Zoology; 1977-1982  
Post-Doc Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, GA;  
1986-1988

**PROFESSIONAL**

**Academic/Administrative Appointments:**

2006 – present Tenured Professor, Department of Biology, University of West Georgia,  
Carrollton, GA.  
2014 – present Adjunct Professor, Department of Biotechnology, Acharya Nagarjuna  
University, Nagarjuna Nagar, Guntur, India  
2011 – 2015 Associate Dean for Research and Faculty Development, College of Science  
and Mathematics, University of West Georgia, Carrollton, GA.  
2001 - 2006 Associate Professor, Department of Biology, University of West Georgia,  
Carrollton, GA.  
1999 - 2001 Associate Professor, School of Graduate Studies, Medical College of Georgia,  
Augusta, GA.  
1998 - 2001 Associate Professor, Department of Ophthalmology, Medical College of  
Georgia, Augusta, GA.  
1998 - 2001 Associate Professor, Department of Biochemistry and Molecular Biology,  
Medical College of Georgia, Augusta, GA.  
1995 - 1998 Assistant Professor, Department of Ophthalmology, Medical College of  
Georgia, Augusta, GA.  
1995 – 1998 Assistant Professor, Department of Biochemistry and Molecular Biology,  
Medical College of Georgia, Augusta, GA.  
1988 – 1992 Assistant Research Scientist, Department of Biochemistry and Molecular  
Biology, Medical College of Georgia, Augusta, GA.  
1982 – 1988 Lecturer, Department of Zoology, M.S. University, Baroda, India.

## **Administrative Experience:**

- 2012 – present      **UWG Campus Coordinator, Georgia-Alabama Louis Stokes Alliance for Minority Participation (LSAMP)**, an alliance consisting of nine predominantly minority institutions, to recruit and provide academic support for minority students in STEM fields through summer undergraduate research, academic advisement and other support structures.
- 2011 – 2016      **Coordinator of STEM Initiative.** As the Co-PI of the University of West Georgia Institutional STEM Excellence (UWise, funded by Georgia Board of Regents, STEM II Initiative), I have been instrumental in establishing STEM initiative in the college. I worked closely with 35 faculty members from three colleges in addressing STEM student success through mini-grants, research grants, summer bridge program and service learning projects. I also coordinate faculty learning community in the college of Science and Mathematics to address pedagogical issues and Scholarship of Teaching and Learning (SoTL).
- 2014 – 2016      **Program Lead, STEM to STEAM Initiative:** The goal of this initiative to help STEM students to improve English writing and analytical skills. From a modest 4 sections of STEM to STEAM in 2013-2014 academic year, the STEM to STEAM ENGL 1101/1102 grew to 32 sections in 2016-2017 academic year, involving 9 faculty members from English and 3 faculty members from COSM and one faculty member from College of Education (who served as external reviewer). In fall 2015, the STEM to STEAM Initiative grew significantly to serve 305 students. The data evidences improvement student grades and a significant improvement in attitudes toward creative/critical writing skills, reduced fear/anxiety for English writing.
- 2011 – 2015      **Associate Dean** since the inception of College of Science and Mathematics, helped in creating vision, directed and advanced the mission of the college, particularly in the areas of research and faculty development; additional responsibilities include coordinating graduate studies, setting strategic priorities, budget issues, alumni relations and fundraising.
- 2013 – 2015      **Executive Committee member**, Newnan Hospital Renovation Project. The fifteen million dollar project includes renovation of a hospital facility into a teaching and learning spaces for the expansion of UWG campus at Newnan.
- 2011 – 2015      **Graduate studies administrator** for College of Science of Science and Mathematics; reorganized the administration of master's programs in Biology, Computer Science, Mathematics and post-bachelor certificate program Geographic Information System in Geosciences; streamlined the admission process and promoted the recruitment of students into these graduate programs, including international students.
- 2009 – 2015      **Program Director**, Collaborative agreement on joint master's program in Biology, University of West Georgia and Acharya Nagarajuna University, Guntur, India; facilitated the formal student exchange agreement.

### **Committees:**

- 2014 - 2015 Member, Advisory Committee, Research and Sponsored Programs, UWG  
2014 - 2015 Member, Best of the West Employee Award and Recognition Committee, UWG  
2009-present Member, Institutional Review Board, Tanner Medical Center, Carrollton, GA.  
2011 - 2012 Coordinator, COSM faculty grant writing Initiative, UWG, Carrollton, GA  
2009 - 2011 Member, Institutional Review Board, UWG, Carrollton, GA.  
2009 - 2011 Member, Academic Policies and Procedures Committee, UWG, Carrollton, GA.  
2009 - 2010 Member, Promotion and Tenure Committee, College of Arts and Sciences, UWG, Carrollton, GA.  
2008 - 2009 Chair, Search committee for Human Physiology faculty, Department of Biology, UWG, Carrollton, GA.  
2007-present Member, Intellectual Property Committee, UWG, Carrollton, GA.  
2007 - 2008 Member, Search Committee for Dean, College of Arts and Sciences, UWG, Carrollton, GA.  
2007 - 2008 Chair, Search committee for Microbiology faculty, Department of Biology, UWG, Carrollton, GA.  
2006 - 2007 Member, VPAA Advisory Committee, UWG, Carrollton, GA.  
2005 - 2006 Member, Dean's advisory committee, College of Arts and Sciences, UWG, Carrollton, GA.  
1995 - 1996 Member, Search Committee for Chair of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.

### **Awards, Honors and Distinctions:**

- INDICASAT-ABAP Distinguished Scientist Award  
Awarded at the ABAP2016 annual meeting, SV University, Tirupati, AP, India, (Dec 21-23, 2016).
- Fulbright-Nehru Scholar Host Institution - Department of Biotechnology, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India. (Dec 2011 - May 2012);
- Fellowship Association of Biotechnology and Pharmacy (Lifetime)
- Biographical Citations Included in the biographical citations for multiple years -Who'sWho in Science and Engineering; Who'sWho in World; Who'sWho in America; Leading Scientists of the World; Who'sWho among American Teachers

### **Membership in Scientific and Professional Societies:**

- 2007-present Member, Association for Biotechnology and Pharmacy.  
1988-present Member, Association for Research in Vision and Ophthalmology.  
1992-present Member, International Society for Eye Research.  
1993-present Member, American Association for Advancement of Science.  
1993-present Member, American Society for Biochemistry and Molecular Biology.

### **Editorial Board:**

2016-present Member, Editorial Board, Canadian Journal of Biotechnology  
2016-present Member, Editorial Board, American Journal of Science and Medical Research  
2015-present Member, Editorial Board, Biolife, International Journal for Biological Sciences.  
2012-present Member, Editorial Board, International Journal of Biotechnology and Biochemistry.  
2009-present Member, Editorial Board, Current Trends in Biotechnology and Pharmacy.  
2001-2005 Managing Editor for a specific issue: "Ocular Proteomics" for Frontiers in Bioscience.

### **Professional Activities:**

2017 Invited participant, Pre-Advisors conference, St. George University, Grenada  
2016 Invited speaker, ABAP2016 and International conference on Environmental conservation and Human Health – Challenges and Strategies, Sri Venkateswara University, Tirupati, India, Dec 21-23, 2016.  
2016 Guest of Honor, World Environmental Day 2016, University of Kashmir, Srinagar, India.  
2015 Reviewer, Process Biochemistry, Elsevier Publications  
2015 Quality Matters Certified Online Course Instructor  
2015 Member, International Organizing Committee, International Conference on Emerging Challenges in Biotechnology, Human Health and Environment, K.L. University, Vaddeswaram, Andhra Pradesh, India, Dec 14-16, 2015.  
2012 Member, International Organizing Committee, International conference on environmental impact on human health and therapeutic challenges, Tirupati, India, Dec 20-22, 2012.  
2011 Member, International Organizing Committee, International Symposium on free radicals and experimental therapeutics, Coimbatore, India, Dec 7-9, 2011.  
2010 Member, International Organizing Committee, 2nd International seminar on Medicinal Plants and Herbal Products, Tirupati, India, Dec 27-29, 2010.  
2009 Member, International Organizing Committee, International seminar on emerging trends in Biomedicine and Nanotechnology: Relevance to Human Health, Guntur, India, Dec 9-11, 2009.  
2008 - 2009 Ad Hoc Grant Reviewer, NSF  
2004 – 2007 UWG representative of the West Georgia NanoBusiness Alliance, Carrollton, GA  
1995 – 2001 Ad Hoc reviewer, Investigative Ophthalmology and Visual Sciences, Experimental Eye Research and Current Eye research, Current Eye Research  
1996 Grant reviewer, Wellcome Research Foundation  
1994 Grant reviewer, International Science Foundation

### **TEACHING**

#### **Undergraduate Courses:**

1. Fundamentals of Zoology (1977-85), Dept. of Zoology, M.S. University, Baroda, India.
2. Gen Biology, Sci102 (Fall, 2000; Winter, 2001) Dept. Biology, Paine College, Augusta, GA.
3. Fundamentals of Biology (Honors) BIOL 1010 (Fall 2001, Fall 2002), Department of Biology, University of West Georgia, Carrollton, GA.
4. Biology of Human Reproduction BIOL 1011 (Summer, 2004, 2005) Department of Biology, University of West Georgia, Carrollton, GA.

5. Principles of Biology I (Honors) BIOL 1107 (Fall, 2001, 2002, 2003, 2004) Department of Biology, University of West Georgia, Carrollton, GA.
6. Principles of Biology II (Honors) BIOL 1108 (Spring, 2002, 2003, 2004, 2005) Department of Biology, University of West Georgia, Carrollton, GA.
7. Principles of Biology for Majors BIOL 2107 (Fall 2005, 2007, 2010), Department of Biology, University of West Georgia, Carrollton, GA.
8. Principles of Biology for Majors BIOL 2108 (Spring 2006), Department of Biology, University of West Georgia, Carrollton, GA.
9. Sophomore Seminars BIOL 2120 (Fall, 2001, Fall 2002, Fall 2003, Fall 2004) Department of Biology, State University of West Georgia, Carrollton, GA.
10. Senior Seminar BIOL 4984 (Fall, 2003, Fall 2004, Fall 2014), Department of Biology, University of West Georgia, Carrollton, GA.
11. Human Physiology, BIOL 3513 (Spring, 2007 - present), Department of Biology, University of West Georgia, Carrollton, GA.
12. Developmental Biology, BIOL 4520 (Spring, 2002 - present) Department of Biology, University of West Georgia, Carrollton, GA.
13. Biology of Aging BIOL 4732 (Fall 2002 - 2009, Summer 2009 - present), Department of Biology, University of West Georgia, Carrollton, GA.
14. XIDS 2002 -What do you know about Health Professions (Sumer 2008-present) department of Biology, University of West Georgia, Carrollton, GA.
15. XIDS 2002 - What do you know about STEM professions and Teaching (Fall, 2011 - present).
16. Proteomics, BIOL 4985 (2015-present), Department of Biology, University of West Georgia, Carrollton, GA.

### **Graduate Courses:**

1. Reproductive Physiology (1982-1985), Dept of Zoology, MS. University, Baroda, India.
2. Core Biochemistry, BMB 814 (Fall/Winter 1988-1992), Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.
3. Core Biochemistry, BMB 815/BMB 8010 (Winter/Spring 1992-1998), Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.
4. Biochemistry workshop, BMB 890 (Winter 1998), Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.
5. Functional Cell Biology, (Biochemistry Section), SGS 8020 (Fall 2000). Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.
6. Developmental Biology BIOL 5520 (Spring 2002-present) Department of Biology, University of West Georgia, Carrollton, GA.
7. Biology of Aging BIOL 5732 (Fall 2002 - present) Department of Biology, University of West Georgia, Carrollton, GA.
8. Human Physiology, BIOL 6513 (Spring and Summer 2007 - present), Department of Biology, University of West Georgia, Carrollton, GA.
9. Graduate Seminar BIOL 6984 (Fall 2002, 2008, 2009, 2014), Department of Biology, University of West Georgia, Carrollton, GA.
10. Graduate Seminar course in Biotechnology (Spring, 2012), Department of Biotechnology, Acharya Nagarjuna University, Guntur, India.
11. Proteomics, BIOL 6985 (2015 - present) Department of Biology, University of West Georgia, Carrollton, GA

### **Allied-Health Courses:**

1. Survey of Biochemistry, BMB 3450 (Fall, 2000); Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.

### **Medical Courses:**

1. Medical Biochemistry, BMB 550/ Problem oriented small group discussions (Fall/winter, 1996-99), Department of Biochemistry and Molecular Biology, Medical College of Georgia, Augusta, GA.

## **MENTORING**

### **Pre-Med Advisor:**

Academic advisor for about 30 students pre-professional track students, Department of Biology, University of West Georgia, Carrollton, GA (2003 – present).

### **Pre-Health Initiative:**

In charge for COSM efforts for streamlining pre-health advisement (2015-2016)

### **Faculty advisor to Student Organizations:**

- Founding Faculty Advisor -  $\beta\beta\beta$  Biological honor society, University of West Georgia, Carrollton, GA.
- Founding Faculty Advisor - Minority Association for Pre-Health Students, University of West Georgia, Carrollton, GA.
- Founding Faculty Advisor - Vegetarian Society, University of West Georgia, Carrollton, GA.
- Faculty Advisor - American Medical Students Association, University of West Georgia, Carrollton, GA.
- Founding Faculty Advisor - Pre-dental Students Association, University of West Georgia, Carrollton, GA.
- Founding Faculty Advisor – Pre-optometry Association, University of West Georgia, Carrollton, GA.

## **RESEARCH**

### **Previous Funded Intramural Research Grants:**

- S. Swamy Mruthinti, Thermal denaturation of AQP0 in reconstituted proteoliposomes. Sponsored Operations Faculty Research Enhancement Awards, UWG, \$ 2,500/year (2004 – 2010).
- S. Swamy Mruthinti, Selectivity of  $\alpha$ -crystallin gene products in the AQP0/ $\alpha$  crystallin interaction. Learning Resources Committee, UWG, \$ 1,500/ year (2004-2010).
- S. Swamy Mruthinti (PI) Structure-function relationship of aquaporin in the eye lens, Student Work Advisory Committee Grant, University of West Georgia, Carrollton, GA \$ 1,800/year (2004 - 2010).

- S. Swamy Mruthinti, D. Lea-Fox and N. Penceo (PIs) Reforming the Introductory Biology course, BIOL 1107. Sub-grant to the GEMS grant awarded by NSF. \$2000 towards 2004 summer salary.
- S. Swamy Mruthinti (PI) Development of a functional assay to determine the effect of thermal denaturation of AQP0 on the water permeability function; Sponsored Operations faculty Research Enhance Awards, University of West Georgia, Carrollton, GA; \$ 2,400 (July, 2003 – June, 2004).
- S. Swamy Mruthinti (PI) Immunochemical characterization of AQP0/ $\alpha$  crystallin complex during thermal denaturation of AQP0, Learning resource center - Faculty Research Grant proposal, University of West Georgia, Carrollton, GA: \$ 1,500 (July, 2003 – June, 2004).
- S. Swamy Mruthinti (PI) Structure-function relationship of Aquaporin0 in the eye lens. Student Work Advisory Committee Grant, University of West Georgia, Carrollton, GA; \$ 1,800 (Aug 2003 – June, 2004).
- S. Swamy Mruthinti, (PI) Development of a functional assay to determine the effect of thermal denaturation of AQP0 on the water permeability function. Sponsored Operations – Faculty Research Enhancement Award, University of West Georgia, Carrollton, GA; \$ 2,400 (Aug, 2003 – June, 2004).
- S. Swamy Mruthinti (PI) Structure-function relationship of Aquaporin0 in the eye lens. Student Work Advisory Committee Grant, University of West Georgia, Carrollton, GA; \$ 1,800 (Aug 2002 – June, 2003).
- S. Swamy Mruthinti (PI) Lens membrane proteins and fiber cell homeostasis, Unrestricted grant, Research to Present Blindness, Department of Ophthalmology, Medical College of Georgia, Augusta, GA \$ 50,000 (1995-2001).
- S. Swamy Mruthinti (PI) Lens membrane proteins and cataract development, MCG Research Institute grant, Medical College of Georgia, Augusta, GA; \$ 13,000 (2000).
- S. Swamy Mruthinti (PI) MIP glycation and cataract development, MCG Research Institute grant, Medical College of Georgia, Augusta, GA; \$ 10,000 (1992).
- S. Swamy Mruthinti (PI) Lens membrane proteins, Biomedical Research support Grant, Medical College of Georgia, Augusta, GA; \$ 5000 (1989).

#### **Previously Funded Extramural Grants:**

- S. Swamy Mruthinti (PI) Acquisition of Liquid Chromatography and Mass Spectrometry to Foster Research-intensive Learning at the University of West Georgia, NSF-Major Research Instrumentation program, \$ 219,376 (2005-2009).
- S. Swamy Mruthinti (Investigator; Vickie Geisler, PI), Generating enthusiasm for Math and Sciences (GEMS) at the University of West Georgia, NSF, \$ 877,093 (Jan 2004 – Dec 2008).
- S. Swamy Mruthinti (PI) Sigma-Tau S.p.A., Pomezia, Rome, Italy. Effect of Acetyl-L-carnitine treatment on diabetic cataract formation.” \$ 36,000 (2000-2004).
- S. Swamy Mruthinti (PI) Sigma-Tau S.p.A., Pomezia, Rome, Italy. Effect of carnitine system on protein glycation - In vitro studies, Sigma-Tau S.p.A. Pomezia, Rome, Italy \$ 10,000. (1998 -2001).
- S. Swamy Mruthinti (Co-I; E. C. Abraham, PI) Protein glycation and cataract development, NIH EY0739, \$1,086,757 (1997 - 2002).
- S. Swamy Mruthinti (PI) MIP26 glycation and lens membrane permeability; NIH, EY10219; \$ 350,000 (direct costs only) (1994 – 2001).
- S. Swamy Mruthinti (Co-PI; PI - Dr. Myrna Gantner) University of West Georgia Institutional STEM Excellence (UWise), funded by Georgia Board of Regents, STEM II Initiative, July, 1,

2011 – June 30, 2016; \$ 344,058 in FY12; \$ 336,248 in FY13, \$ 306,296 in FY14, \$ 220,000 in FY15; \$ 220,000 in FY16.

- S. Swamy Mruthinti (Co-PI; PI – Dr. F. Khan) Wider implementation of STEM educational reforms (WISER) Practices Planning Grant: Setting the stage for institutional commitment to evidence-based teaching and learning, Sept 15, 2013 – Sept 14, 2016; \$ 250,000, National Science Foundation (NSF).
- S. Swamy Mruthinti, (Program Lead) From STEM to STEAM: Building meaningful collaborations between the sciences and humanities for student success, Complete College Georgia Initiative, Georgia Board of Regents; \$ 45,000 (7/1/2014 – 6/30/2016)

#### **Recently Submitted Grants:**

- S. Swamy Mruthinti, PI (Dr. F. Khan and Dr. Michael Gordon, Co-PIs) Scholarships to Motivate Academically Ready and Talented STEM Students (SMART-STEM), NSF, \$ 601,543 for 5 years, (resubmitted in Aug 13, 2013; declined, planning to resubmit for the next funding cycle)
- S. Swamy Mruthinti, Co-PI (PI: Barbara Baumstaurk) GSU-UWG Institutional Bridge to Doctoral Education (GUIDE), NIH, \$ 1,299,464 for 5 years) (submitted in Nov 2013, declined, planning to resubmit for the next funding cycle)
- S. Swamy Mruthinti, Co-PI (PI: Dr. Beheruz Sethna) Faculty interactions across disciplines and continents to enhance science teaching and learning, Obama-Singh 21<sup>st</sup> Century Initiative, US-India Educational Foundation; \$ 250,000 for 3 years (submitted in Nov, 2013, declined)
- S. Swamy Mruthinti, Co-PI (PI: John Hansen) Acquisition of Time-resolved Emission Spectrometer for Interdisciplinary Research and Undergraduate Training, \$ 250,000, NSF – MRI program (submitted in Jan, 2014; declined, planning to resubmit in 2017).
- S. Swamy Mruthinti, Co-PI (PI: Sheila Jones) RCN-UBE: Georgia STEM Network, A model for System-wide Change. NSF, \$ 499,934 for 4 years (submitted on Jan 6, 2016, declined).

#### **Active Extramural Grants:**

- S. Swamy Mruthinti (Campus coordinator) Georgia – Alabama Louis Stokes Alliance for Minority Participation, Sept 15, 2013 – Sept 14, 2018, \$ 3465,320 for 5 years to the Alliance (UWG portion is \$ 250,000 for 5 years), 09/15/2013 to 09/14/2018, National Science Foundation (NSF).

#### **Grants under review:**

- S. Swamy Mruthinti (Co-PI) (PI: Kania Creer, Georgia Southern University) Partnering to Improve Undergraduate STEM education, NSF, \$ 8285 (UWG sub-award) (submitted on Dec 12, 2016)
- S- STEM at UWG Scholarships to Motivate Academically Ready and Talented STEM Students, NSF, \$ 982, 631 for 5 years (submitted on March 27, 2017)

## PUBLICATIONS

### **Publications in Refereed Journals:** [*Names of undergraduate students shown in italics*]

1. *J. Brett Kimbrell, Joshua Hite, Christopher Crittenden, Joanna K. Denton, Walter Steward, S. Swamy-Mruthinti*, Megumi Fujita and Farooq A. Khan, Formation of Clusters of Tetrabutyl Ammonium Halides by Electrospray Ionization Mass Spectrometry, to be submitted to Rapid Communications in Mass Spectrometry.
2. *J.B. Kimbrell, J. Hite, D.A. Volk, S. McDonald, S. Swamy-Mruthinti*, and Khan, F. A. Selective binding of alkali and alkaline earth metal ions to beauvericin investigated by electrospray ionization mass spectrometry, Rapid Communications in Mass Spectrometry (in preparation).
3. Hansen, J.E., *Leslie, L.* and **Swamy-Mruthinti, S.** (2014) Kinetics of thermal denaturation of AQP0, Biochem. Biophys Res. Commun, 450(4):1668-72. doi: 10.1016/j.bbrc.2014.07.056. Epub 2014 Jul 17.
4. **Swamy-Mruthinti S**, Srinivas V, Hansen JE, Rao CM (2013) Thermal Stress Induced Aggregation of Aquaporin 0 (AQP0) and Protection by  $\alpha$ -Crystallin via Its Chaperone Function. PLoS ONE 8(11): e80404. doi:10.1371/journal.pone.0080404
5. *J. B. Kimbrell, J.B., Hite, J., Skala, K.M., Crittendon, C.M. Richardon, C.N., Swamy-Mruthinti, S., Fujita, M and Khan, F.A.* Direct binding of halide ions by valinomycin. Supramolecular Chemistry, 23, 782-789, 2011.
6. *Skala, K.N., Perkins, K.G., Ali, A., Kutlik, R., Summitt, A.M., Swamy-Mruthinti, S., Khan, F.A. and Fujita, M.* Anion and cation binding by a new indole/pyridine/amine-based ion-pair receptor, Tetrahedron Letters, 51, 6516–6520, 2010.
7. Mruthinti, S., Schade R.F., Harrell, D.U., Gulati, N.K., **Swamy-Mruthinti, S.**, Lee, G.P. and Buccafusco, J.J. Autoimmunity in Alzheimer's disease as evidenced by plasma immunoreactivity against RAGE and A $\beta$ 42: Complication of diabetes. Current Alzheimer's Research, 3(3), 229-235, 2006.
8. Mruthinti, S., Buccafusco, J.J., Sood, A, Humphrey, C.L, and **Swamy-Mruthinti, S.** The induction of  $\beta$  amyloid surface binding and enhanced cytotoxicity in cultured PC-12 and IMR-32 cells by advanced glycation end products (AGEs). Neuroscience, 142, 463-473, 2006.
9. S. Mruthinti, W.D. Hill, **S. Swamy-Mruthinti**, J.J. Buccafusco. Relationship between the induction of RAGE cell-surface antigen and the expression of amyloid binding sites. J. Molecular Neuroscience. 20, 223-232, 2003.
10. **Swamy-Mruthinti, S.**, Coral Miriam, K., Krishnakumar, S. Biswas, J., Ramakrishnan, S. Nagaraj, R.H. and Sulochana, K. Immunolocalization of end products of advanced glycation in the retinal neovascular membranes in diabetic retinopathy and Eales' disease, Curr. Eye Res., 25, 139-145, 2002.
11. **Swamy-Mruthinti, S.** Glycation decreases calmodulin binding to lens transmembrane protein, MIP. Biochem Biophys Acta, 1536, 64-72, 2001.
12. **Swamy-Mruthinti, S.**, and A.L. Carter. Acetyl-L-carnitine decreases glycation of lens proteins, in vitro studies. Exp. Eye Res., 69, 109-115, 1999.
13. **Swamy-Mruthinti, S.**, Shaw, S.M., Zhao, H-R. and Green, K., Evidence of a glycemic threshold for the development of cataracts in diabetic rats. Curr. Eye Res., 18, 423-429, 1999.
14. **Swamy-Mruthinti, S.** Expression and characterization of bovine MIP in Baculovirus expression system. Curr. Eye Res., 17, 88-94, 1998.
15. **Swamy-Mruthinti, S.**, and Schey, K.L. Mass spectroscopic identification of glycated sites of MIP. Curr. Eye Res., 16, 938-941, 1997.

16. Ramachandran, A.V., **Swamy, M.S.** and Kurup, A.K. Local and systemic alterations in cyclic-3',5'-AMP phosphodiesterase activity in relation to tail regeneration under hypothyroidism and T-4 replacement in the lizard, *Mabuya carinata*. *Molecular Reproduction and Development*, 45, 48-51, 1996.
17. **Swamy-Mruthinti, S.**, Green, K. and Abraham, E.C. Scheimpflug densitometric analysis of diabetic cataract formation in streptozotocin induced diabetic rats. Correlation with glycation. *Ophthalmic Res.*, 28, 230-236, 1996.
18. **Swamy-Mruthinti, S.**, Green, K. and Abraham, E.C. Inhibition of cataracts in moderately diabetic rats by aminoguanidine. *Exp. Eye Res.*, 62, 505-510, 1996.
19. **Swamy, M.S.**, Tsai, C., Abraham, A. and Abraham, E.C. Glycation mediated lens crystallin aggregation and cross-linking by various sugars and sugar phosphates, in vitro. *Exp. Eye Res.* 56:177-185, 1993.
20. **Swamy, M.S.** and Abraham, E.C. Glycation of lens membrane intrinsic proteins. *Curr. Eye Res.* 11:833-342, 1992.
21. **Swamy, M.S.** and Abraham, E.C. Glycation of lens MIP26 affects the permeability in reconstituted liposomes. *Biochem. Biophys. Res. Commun.* 186: 632-638, 1992.
22. **Swamy, M.S.**, Abraham, A. and Abraham, E.C. Glycation of human lens proteins: Preferential glycation of  $\alpha$ A subunits. *Exp. Eye Res.* 54:337-345, 1992.
23. **Swamy, M.S.** and Abraham, E.C. Differential glycation of  $\alpha$ ,  $\beta$  and  $\gamma$  crystallins. *Exp. Eye Res.* 52:439-444, 1991.
24. **Swamy, M.S.** and Abraham, E.C. Reverse-phase HPLC analysis of human  $\alpha$ A crystallin. *Curr. Eye Res.* 10:213-220, 1991.
25. Gulati, A.K. and **Swamy, M.S.** Regeneration of skeletal muscle in streptozotocin-induced diabetic rats. *Anat. Rec.* 229:298-304, 1991.
26. Abraham, E.C., Perry, R.E., Abraham, A. and **Swamy, M.S.** Proteins of urea-soluble high molecular weight (HMW) aggregates from diabetic cataract: Identification of in vivo glycation sites. *Exp. Eye Res.* 52:107-112, 1991.
27. **Swamy, M.S.**, Shyamala, M., Abraham, J., Garver, F.A. and Abraham, E.C. The fate of  $\gamma$ L-crystallins in rat lens during diabetic cataractogenesis as determined by a monoclonal antibody. *Curr. Eye Res.* 8:989-996, 1989.
28. Granstrom, D., **Swamy, M.S.**, Abraham, E.C. and Takemoto, L. Covalent changes in the major intrinsic polypeptide (MIP26K) during cataract development in the streptozotocin-induced diabetic rat. *Curr. Eye Res.* 8:589-593, 1989.
29. **Swamy, M.S.** and Abraham, E.C. Inhibition of lens crystallin glycation and high molecular weight aggregate formation by aspirin in vitro and in vivo. *Invest. Ophthalmol. Vis. Sci.* 30:1120-1126, 1989.
30. **Swamy, M.S.** and Abraham, E.C. Lens protein composition, glycation and high molecular weight aggregate formation by aspirin in vitro and in vivo. *Invest. Ophthalmol. Vis. Sci.* 30:1120-1126, 1989.
31. Perry, R.E., **Swamy, M.S.** and Abraham, E.C. Progressive changes in lens crystallin glycation and high-molecular-weight aggregate formation leading to cataract development in streptozotocin-diabetic rats. *Exp. Eye Res.* 44:269-282, 1987.
32. Ramachandran, A.V., **Swamy, M.S.** and Shah, R.V. Tail regeneration in the Scincid lizard, *Mabuya carinata* related with breeding seasons and thyroid activity. *Amphibia-Reptilia*, 5:135-144, 1984.
33. **Swamy, M.S.**, Ramachandran, A.V. and Shah, R.V. Hepatic and renal ascorbic acid contents during tail regeneration in the Scincid lizard, *Mabuya carinata*. (Boulenger) under euthyroidic, hypothyroidic and T4 replaced conditions. *Monitore Zool. Ital.*, 17:105-112, 1983.

34. Ramachandran, A.V., **Swamy, M.S.** and Shah, R.V. Involvement of cAMP in tail regeneration in the Scincid lizard, *Mabuya carinata* as evaluated by the activity levels of cAMP phosphodiesterase: A systemic and local analysis. Cellular Molecular Biol. 29:53-60, 1983.
35. Ramachandran, A.V., **Swamy, M.S.** and Shah, R.V. Local & systemic alterations in protein content & transaminases during tail regeneration in the Scincid lizard, *Mabuya carinata*. Indian J. Exp. Biol 20:820-823, 1982.
36. **Swamy, M.S.**, Ramachandran, A.V. and Shah, R.V. Local & systemic alterations in lactate and succinate dehydrogenases during tail regeneration in the Scincid lizard, *Mabuya carinata*. Indian J. Exp. Biol. 20:817-819, 1982.
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### **Student Publications and Presentations at Regional and National Conferences:**

1. *J. Brett Kimbrell, Joshua Hite, Christopher Crittenden, Kimberly Bacon and Joanna Denton, S. Swamy-Mruthinti*, Megumi Fujita and Farooq A. Khan, Direct binding of halide ions by valinomycin, Southeastern Regional Meeting of the American Chemical Society (SERMACS), Richmond, VA, Poster Presentation, October, 2011.
2. *J. Brett Kimbrell, Joshua Hite, Christopher M. Crittenden, Satyanarayana Swamy-Mruthinti*, Megumi Fujita and Farooq A. Khan; Binding of Beauvericin to Alkali and Alkaline Earth Metal ions to Electrospray Ionization Mass Spectrometry and DFT Calculations; National Conference on Undergraduate Research (NCUR), Ithaca, NY, Poster Presentation, April, 2011.
3. *Grace Liu, Kimberly Bacon, J. Brett Kimbrell, Joshua Hite, Christopher Crittenden, Satyanarayana Swamy-Mruthinti*, Megumi Fujita and Farooq A. Khan; Formation of Clusters of Tetrabutyl Ammonium Halides by Electrospray Ionization Mass Spectrometry; National Conference on Undergraduate Research (NCUR), Ithaca, NY, Poster Presentation, April, 2011.
4. *J. Brett Kimbrell, Joshua Hite, Tara-Lynn Baratz, Courtney N. Richardson, S. Swamy-Mruthinti* and Farooq A. Khan; Selective Binding of Alkali and Alkaline Earth Metal ions to Beauvericin Investigated by Electrospray Ionization Mass Spectrometry; Meeting of the National Conference on Undergraduate Research (NCUR), Missoula, MT, Poster Presentation, April, 2010.
5. *Tara-Lynn Baratz, Courtney N. Richardson, S. Swamy-Mruthinti* and Farooq A. Khan; An Exploration of the Guest-Host Binding Selectivities of Alkali and Alkaline Earth Metal Ions to Crown Ethers; Annual Conference of the National Collegiate Honors Council (NCHC), Washington, D. C., Poster Presentation, October, 2009.
6. *Jennifer Gaddie, Shavon T. Bennett, Audrey L. Slutsky, Tara-Lynn D. Baratz, David A. Volk, Courtney N. Richardson, Farooq A. Khan, and S. Swamy-Mruthinti*; The Formation of Sodium Acetate Cluster Cations via ESI-Mass Spectrometry; Southeastern Regional Meeting of the American Chemical Society (SERMACS), Nashville, TN, November, 2008.
7. *Lara Dakkak, Tara-Lynn Baratz,, S. Swamy-Mruthinti* and Farooq A. Khan; An Exploration of the Guest-Host Binding Selectivities of Amines to Crown Ethers; Meeting of the National Conference on Undergraduate Research (NCUR), Salisbury, MD, Poster Presentation, April, 2008.
8. *Patricia Onuegbu, S. Swamy-Mruthinti* and J.E. Hansen. Does age-dependent loss of protective mechanisms exacerbate protein denaturing? Sigma Xi Student research competitions, University of West Georgia, Carrollton, GA, March, 2004.
9. *Patricia Onuegbu, J.E. Hansen and S. Swamy-Mruthinti*. Effect of Age-dependent modifications of  $\alpha$  crystallin on its chaperone function. National Council of Undergraduate Research, NCUR-2004, Indianapolis, IN, April, 15-17, 2004.
10. *Joseph Fachini, J.E. Hansen and S. Swamy-Mruthinti*, Interaction of AQP0 and  $\alpha$ -crystallin during thermal stress. 65<sup>th</sup> Annual meeting of Southeastern Biologists, Memphis, TN, April 14-17, 2004
11. *Logan Lensey, Cathy Tran, J. E. Hansen and S. Swamy-Mruthinti*. A study into the aggregation of membrane proteins. Sigma Xi Student research competitions, University of West Georgia, Carrollton, GA, March, 2004.
12. *Joseph Fachini, S. Swamy-Mruthinti* and J.E. Hansen. Immunochemical characterization of Aquaporin and  $\alpha$  crystallin interaction during thermal stress. Sigma Xi Student research competitions, UWG, Carrollton, GA, March, 2004.
13. *Patricia Onuegbu, J.E. Hansen and S. Swamy-Mruthinti*. Effect of Age-dependent modification of

$\alpha$  crystallin on the chaperone function. National collegiate Honors Council (NCHC) meeting, Chicago, Nov 5-9, 2003.

14. *Angela Kersh* and **S. Swamy-Mruthinti**. Immunological characterization of Aquaporin0 and  $\alpha$  crystallin interaction. 9<sup>th</sup> Annual Student conference for Research and Creative Arts., University of Houston-Clear Lake, Houston, TX. April, 2003.
15. *Angela Kersh*, **S. Swamy-Mruthinti** and John E. Hansen. Specificity of  $\alpha$  crystallin gene products in preventing thermal aggregation of AQP0. Sigma XI Student presentations, University of West Georgia, Carrollton, GA, March 2003.
16. *Patricia Onuegbu* and **S. Swamy-Mruthinti**. Effect of age-dependent modifications of  $\alpha$  crystallin on its chaperone function. Sigma Xi student presentations, University of West Georgia, Carrollton, GA, March 2003.
17. *Laura Altom*, **S. Swamy-Mruthinti** and John E. Hansen. Developing a functional assay to determine the structural integrity of AQP0 following thermal stress. Sigma Xi Student research competitions, University of West Georgia, Carrollton, GA, March 2003.
18. *Justin Russell*, John Hansen and **S. Swamy-Mruthinti**. Structure-function relationship of AQP0 in the Human eye lens. Sigma Xi Student presentations, University of West Georgia, Carrollton, GA, March, 2002.
19. *Kristin Cooker*, John Hansen and **S. Swamy-Mruthinti**. Expression and characterization of lysine mutants of AQP0 in baculovirus expression system, Big-Night Research presentation, University of West Georgia, Carrollton, GA, April, 2002.

#### **Research Publications by Undergraduate Students:**

1. *Joseph Fachini and Ajay Pillai*. (Faculty Advisor: **S. Swamy-Mruthinti**). Immunochemical characterization of Aquaporin and  $\alpha$  crystallin interaction during thermal stress. Proceedings of the NCUR-2006, 2006.
2. *Patricia Onuegbu*, (Faculty Advisor: **S. Swamy-Mruthinti**; Co-Advisor: J. E. Hansen). Effect of age-dependent modifications of  $\alpha$  crystallin on its chaperone function. Proceedings of the NCUR-2004, 2004.