

CECILIA ELIZABETH MCGREGOR, PHD

DEPARTMENT OF HORTICULTURE
1111 MILLER PLANT SCIENCES BUILDING
UNIVERSITY OF GEORGIA
ATHENS
GA, 30606

1. ACADEMIC POSITIONS

- July 2015 – present:* Associate Professor, Horticulture Department, University of Georgia, Athens, GA
- 2008 – 2015:* Assistant Professor, Horticulture Department, University of Georgia, Athens, GA
- 2008:* Post-Doctoral Associate, Department of Entomology, Louisiana State University, Baton Rouge, LA
- 2006 – 2008:* Post-Doctoral Associate, School of Plant, Environmental and Soil Sciences, Louisiana State University, Baton Rouge, LA
- 2001 – 2006:* Graduate Research Assistant (Ph.D.), Department of Horticulture, Louisiana State University, Baton Rouge, LA
- 1999 – 2001:* Project Manager (Plant Molecular Markers), Biotechnology Division, ARC-Roodeplaat, Agricultural Research Council, Pretoria, South Africa
- 1995 – 1999:* Researcher (Plant Molecular Markers), Biotechnology Division, ARC-Roodeplaat, Agricultural Research Council, Pretoria, South Africa.
- 1993 – 1995:* Graduate Research Assistant (M.S.), Department of Genetics, University of Stellenbosch, Stellenbosch, South Africa.

2. EDUCATION

- 2001 – 2006:* Ph.D., Horticulture, Louisiana State University, USA.
Differential expression and detection of transcripts in sweetpotato (*Ipomoea batatas* (L.) Lam.) using cDNA microarrays.
Advisor: Prof. Don R. LaBonte
- 1993 – 1995:* M.Sc., Molecular Genetics, University of Stellenbosch, South Africa.
Determining the population structure of the endangered Cape yellowfish (*Barbus capensis*) using RAPD markers.
Advisor: Prof. Dries Retief
- 1989 – 1992:* B.Sc. Agric., Genetics and Animal Physiology, University of Stellenbosch, South Africa.

3. TEACHING

- PBGG (CRSS/HORT) 4140/6140. Plant Breeding. Fall 2009, 2010, 2011, 2012, 2013, 2014, 2015 & 2016.
- PBGG 6000. Plant Breeding Practicum. Guest lecturer. Summer 2009, 2010, 2011, 2012, 2013, 2014, 2015 & 2016.
- PBGG (HORT/ECOL) 8390. Conservation of Plant Genetic Resources. Spring 2012, 2014 & 2016
- HORT 3620. Plant Propagation. Co-teach. Fall 2012, Spring 2014, 2015 & 2016
- HORT 3010. Introduction to Vegetable Crops. Guest lecturer. Fall 2015.
- Georgia Plant Science Scholars Lecture, 6/25/2012
- HORT 8080. Horticulture Research. Spring 2011 and Summer 2013.
- HORT 8111. Horticulture Data Interpretation. Co-teach. Spring 2011, 2012, 2014.
- HORT 2000. Horticultural Science. Guest lecturer. Spring and Fall 2010, 2011 and 2012 and Spring 2013.
- HORT 3300. Sustainable and Organic Gardening. Co-teach. Fall 2011, 2012.
- P BIO 4960. Independent Research in Plant Biology. Fall 2010.
- BTEC 3990: Independent Research in Applied Biotechnology. Fall 2013
- HORT 4070. Independent Study abroad – Cape Flora. Summer 2009.
- CEAS Young Scholar Program 2011, 2012 & 2015
- Co-ordinator and instructor for International IAEA MOLECULAR MARKER COURSE and International UNESCO/BAC BETCEN MOLECULAR MARKER COURSES (1996-2001; 5 to 21 day courses; representing 20% of employment responsibilities). Developed curricula and lectured on principles and applications of molecular markers in plant breeding. Co-ordinated with international guest-lecturers. Wrote manual with lecture notes and detailed protocols for all laboratory techniques covered.

Graduate Advising

Major Professor (7 Students)

- 3 Ph.D. (2 current, 1 graduated)
- 4 M.S. (2 current, 2 graduated)

Graduate Committee Member (11 Students)

- 7 Ph.D. (6 current, 1 graduated)
- 4 M.S. (4 graduated)

4. RESEARCH

Grants Received

Total Grants Amount: \$ 9,754,016

Grants Amount received by Dr. McGregor: \$ 849,468

- Federal: Total \$ 9,416,893; McGregor \$ 608,661
- Seed Companies: Total \$ 146,143; McGregor \$ 79,307
- Other: Total \$ 190,980; McGregor \$ 161,500

Intellectual Property

1. Provisional application for United States Letters Patent for “Methods and compositions for producing watermelon plants with selected seed sizes”: Inventors: Hussein Abdel-Haleem,

Steven Knapp, Cecilia McGregor, Katherine Sandlin and Jason Prothro. File No. SEMB:010USP1. Owner: Monsanto Vegetable Seeds Inc. Filed June 2012.

2. Provisional application for United States Letters Patent for “Methods and compositions for watermelon sex expression”. Inventors: Hussein Abdel-Haleem, Steven Knapp, Cecilia McGregor and Jason Prothro. File No. SEMB:007USP1. Owner: Monsanto Vegetable Seeds Inc. Filed December 2012.

Chapters in Books

1. Firon, N., D. LaBonte, A. Villordon, C. McGregor, Y. Kfir, and E. Pressman. 2009. Botany and physiology: Storage root formation and development, p. 13-26. In: G. Loebenstein and G. Thottappilly (eds.), The sweetpotato. Springer, Netherlands.

Refereed Publications

1. Meru, G. and C. McGregor. 2016. A genetic locus associated with resistance to *Fusarium oxysporum* f. sp. *niveum* race 2 in *Citrullus lanatus* type watermelon. *Journal of the American Society for Horticultural Science* 141:617–622.
2. Meru, G. and C. McGregor. 2016. Genotyping by sequencing for SNP discovery and genetic mapping of resistance to race 1 of *Fusarium oxysporum* in watermelon. *Scientia Horticulturae* 209: 31-40.
3. Meru, G. and C. McGregor. 2014. Quantitative trait loci associated with fatty acid content of watermelon seed. *Journal of the American Society for Horticultural Science* 139(4):433-441.
4. McGregor, C.E. and V. Waters. 2014. Flowering patterns of pollinizer and triploid watermelon cultivars. *HortScience* 49(6):714-721.
5. Ren, Y., C. McGregor, Y. Zhang, G. Gong, H. Zhang, S. Guo, H. Sun, W. Cai, J. Zhang and Y. Xu. 2014. An integrated genetic map based on four mapping populations and quantitative trait loci associated with economically important traits in watermelon (*Citrullus lanatus*). *BMC Plant Biology* 14:33.
6. McGregor, C.E., T. Vashisth, V. Waters, and H. Abdel-Haleem. 2014. Flowering time in watermelon is associated with a major quantitative trait locus on chromosome 3. *Journal of the American Society for Horticultural Science* 139(1):48–53.
7. McGregor, C.E. and V. Waters. 2013. Pollen viability of F₁ hybrids between watermelon cultivars and disease resistant, infra-specific crop wild relatives. *HortScience* 48(12): 1428–1432.
8. Meru, G. and C. McGregor. 2013. Genetic mapping of seed traits correlated with seed oil percentage in watermelon. *HortScience* 48 (8): 955-959.
9. Prothro, J., H. Abdel-Haleem, E. Bachlava, C. White, S. Knapp, and C. McGregor. 2013. Quantitative trait loci associated with sex expression in an inter-subspecific watermelon population. *Journal of the American Society for Horticultural Science* 138(2):125–130.
10. Meru, G., D. McDowell, V. Waters, A. Seibel, J. Davis, and C. McGregor. 2013. A non-destructive genotyping system from a single seed for marker-assisted selection in watermelon. *Genetics and Molecular Research* 12 (1): 702-709.
11. McGregor C.E. 2012. *Citrullus lanatus* germplasm of Southern Africa. *Israel Journal of Plant Sciences* 60: 403–413.

12. Prothro, J., K. Sandlin, H. Abdel-Haleem, E. Bachlava, W. White, S. Knapp, and C. McGregor. 2012. Main and epistatic quantitative trait loci associated with seed size in watermelon. *Journal of the American Society for Horticultural Science* 137(6): 452–457.
13. Prothro, J., K. Sandlin, R. Gill, E. Bachlava, V. White, S. Knapp, and C. McGregor. 2012. Mapping of the egusi seed trait locus (*eg*) and quantitative trait loci associated with seed oil percentage in watermelon. *Journal of the American Society for Horticultural Science* 137(5):311–315.
14. Sandlin, K.C., J.M. Prothro, A.F. Heesacker, N. Khalilian, R. Okashah, W. Xiang, E. Bachlava, D. Caldwell, D. Seymour, V. White, E. Chan, G. Tolla, C. White, D. Safran, E. Graham, S.J. Knapp, and C.E. McGregor. 2012. Comparative mapping in watermelon [*Citrullus lanatus* (Thunb.) Matsum. et Nakai]. *Theoretical and Applied Genetics* 125 (8): 1603-1618.
15. Candole, B.L., P.J. Conner, C.E. McGregor, V. Waters, and P. Ji. 2012. The disease reactions of heirloom bell pepper ‘California Wonder’ to *Phytophthora capsici*. *Agricultural Sciences* 3: 417-424.
16. Husseneder, C., C. McGregor, R.P. Lang, R. Collier, and J. Delatte. 2012. Transcriptome profiling of female alates and egg-laying queens of the *Formosan* subterranean termite. *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics* 7: 14-27.
17. McGregor, C., V. Waters, S. Nambeesan, D. MacLean, B.L. Candole, and P. Conner. 2011. Genotypic and phenotypic variation among pepper accessions resistant to *Phytophthora capsici*. *HortScience* 46: 1235–1240.
18. McGregor, C.E., D.W. Miano, D. La Bonte, M. Hoy, C.A. Clark, and G.J.M. Rosa. 2009. Differential gene expression of resistant and susceptible sweetpotato plants after infection with the causal agents of sweet potato virus disease. *Journal of the American Society for Horticultural Science* 134(6): 658–666.
19. McGregor, C., M. Miano, D. La Bonte, M. Hoy, and C. Clark. 2009. The effect of the sequence of infection of the causal agents of sweet potato virus disease on symptom severity and individual virus titers in sweetpotato cv. Beauregard. *Journal of Phytopathology* 157: 514–517.
20. McGregor, C.E. and D.R. LaBonte. 2006. Differential expression of genes between storage roots of sweetpotato cultivars ‘Jewel’ and ‘White Jewel’. *Journal of the American Society for Horticultural Science* 131(6): 798-805.
21. Kokkinos, C.D., C.A. Clark, C.E. McGregor, and D.R. LaBonte. 2006. The effect of sweet potato virus disease and its viral components on gene expression levels in sweetpotato. *Journal of the American Society for Horticultural Science* 131(5): 657-666.
22. McGregor, C.E., L. He, R.M. Ali, B. Sosinski, J. Jankowicz, K. Burg, and D.R. LaBonte. 2005. The effects of replicate number and image analysis method on sweetpotato [*Ipomoea batatas* (L.) lam.] cDNA microarray results. *Plant Molecular Biology Reporter* 23: 367-381.
23. McGregor, C.E., R. van Treuren, R. Hoekstra, and T.J.L. van Hintum. 2002. Analysis of the wild potato germplasm of the series *Acaulia* with AFLPs: Implications for *ex situ* conservation. *Theoretical and Applied Genetics*. 104: 146-156.
24. McGregor, C.E., M.M. Greyling, and L. Warnich. 2000. The use of simple sequence repeats (SSRs) to identify commercially important potato (*Solanum tuberosum* L.) cultivars in South Africa. *South African Journal of Plant and Soil* 17:177-179.

25. McGregor, C.E., C.A. Lambert, M.M. Greyling, J.H. Louw, and L. Warnich. 2000. A comparative assessment of DNA fingerprinting techniques (RAPD, ISSR, AFLP and SSR) in tetraploid potato (*Solanum tuberosum* L.) germplasm. *Euphytica* 113:135-144.

Abstracts

1. Rajewski, A., McGregor, C. E., Zhang, D., & Wetzstein, H. (2016). Evidence of Interspecific Hybridization or Incomplete Lineage Sorting in River Cane, *HortScience* 52(9): S106
2. Rajewski, A., McGregor, C. Donglin, Z. & H. Wetzstein (2015) Clonal structure, genetic diversity, and in vitro propagation of river cane (*Arundinaria gigantea*), A candidate for use in wetlands reclamation. *HortScience* 50(9): S24.
3. Coolong, T. & C. McGregor (2015) Georgia watermelon trial results from 2014. *HortScience* 50(9): S43.
4. Meru, G. & C. McGregor (2015) Five years of Fusarium wilt: What did we learn? *HortScience* 50(9): S42. (*Supervisor and Major Professor of the first author*).
5. McGregor, C. & V. Waters (2014) Synchronized Flowering of Triploid Watermelon Cultivars and Diploid Pollenizers. *HortScience* 49(9): S52
6. McGregor, C. & V. Waters (2013) Flowering time in watermelon. *HortScience* 48(9): S58.
7. Meru, G. & C. McGregor (2013) Genetic factors associated with seed oil percentage in watermelon. *HortScience* 48(9): S38. (*Supervisor and Major Professor of the first author*).
8. McGregor, C., Sandlin, K., J. Prothro, C. McGregor, A. Heesacker, N. Khalilian, R. Okashah, W. Xiang, E. Bachlava, D. Caldwell, D. Seymour, V. White, E. Chan, G. Tolla, C. White, D. Safran, E. Graham, and S. Knapp. 2011. QTL mapping of important horticultural traits in watermelon. *HortScience* 46(9): S34.
9. Thiessen, M., C. Gillett, D.R. LaBonte, C. Clark, and C.E. McGregor. 2010. Effect of vine cutback on disease resistance and severity of virus titres on resistant and susceptible varieties. *HortScience* 45: 486.
10. McGregor, C.E., D.W. Miano, M.W. Hoy, C.A. Clark, and D.R. LaBonte. 2007. The effect of the sequence and time-lapse between infection of the causal agents of sweet potato virus disease (SPVD) on symptom development and individual virus titers. *HortScience* 42(4): 922.
11. Clark, C.A., M.W. Hoy, C.E. McGregor, D.W. Miano, and D.R. LaBonte. 2007. Suppression of sweetpotato virus disease by a graft-transmissible agent. *Phytopathology* 97(7): S23.

Proceedings Articles

1. Grumet, R., et al., & McGregor, C. E. (2016). CucCAP - Developing Genomic Resources for the Cucurbit Community, *Eucarpia Cucurbitaceae 2016 Proceedings* McGregor, C.E. (2014) Identification of Quantitative Trait Loci (QTL) in watermelon (*Citrullus lanatus*). *Cucurbitaceae 2014 Proceedings*: 152-155.
2. Meru, G.M. and C.E. McGregor (2014) Genetic factors associated with seed oil percentage and fatty acid composition of watermelon seed. *Cucurbitaceae 2014 Proceedings*: 149-151.
3. McGregor, C.E., M. Greyling, J. Banda, and S. Laurie. 2001. DNA fingerprinting of sweetpotato *Ipomoea batatas* (L.) Lam.: Two case studies in Africa. *Acta Hort.* 546: 243-248.
4. McGregor, C.E., M.M. Greyling, A. Robyn, and G.M. Littlejohn. 2001. Genetic diversity and its relation to habitat range of *Protea coronata*, *P. holosericea* and *P. neriifolia* as determined by RAPDs. *Acta Hort.* 545: 39-41.

Popular Publications

1. Clark, C.A., D.R. LaBonte, R.A. Valverde, M.W. Hoy, P. Lotrakul, C. Kokkinos, and C. McGregor. 2003. Technology to improve the quality of sweetpotato 'seed'. *Louisiana Agriculture* 46(4): 29 – 31.

Presentations of Research Papers at Professional Meetings (since 2010)

1. Legendre, R.D. & McGregor, C.E. 2017. Candidate genes regulating fruit size and shape in Watermelon. Watermelon Research and Development Group. American Society of Horticultural Science. Mobile, AL.
2. McGregor, C.E. & T. Coolong. 2015. Georgia watermelon trial results from 2014. Watermelon Working Group at the Southern Regional ASHS meeting. San Antonio, TX (Oral).
3. McGregor, C.E. & Meru, G. 2015. Five years of Fusarium wilt: What did we learn? Watermelon Working Group at the Southern Regional ASHS meeting. San Antonio, TX (Oral).
4. Rajewski, A., C.E. McGregor; Zhang, D. & H. Wetzstein (2015) Clonal structure, genetic diversity, and in vitro propagation of river cane (*Arundinaria gigantea*), A candidate for use in wetlands reclamation. Southern Regional ASHS meeting. San Antonio, TX (Oral)
5. Meru, G. & C.E. McGregor. 2013. Genetic factors associated with seed oil percentage in watermelon. Southern Regional ASHS meeting, Orlando, FL (Oral)
6. McGregor, C.E. & V. Waters. 2013. Flowering time in watermelon. Watermelon Working Group at the Southern Regional ASHS meeting, Orlando, FL. (Oral)
7. Meru, G.M., D.E. McDowell, and C.E. McGregor. 2012. A high throughput DNA extraction protocol for a seed based genotyping system in watermelon. Plant and Animal Genome XX, San Diego, CA. (Poster)
8. McGregor, C., Sandlin, K., Prothro, J., Heesacker, A., Khalilian, N., Okashah, R., Xiang, W., Bachlava, E., Caldwell, D., Seymour, D., White, V., Chan, E., Tolla, G., White, C., Safran, D., Graham, E., & S. Knapp. 2011. QTL mapping of important horticultural traits in watermelon. Watermelon Working Group at the Southern Regional ASHS meeting, Corpus Christi, TX. (Oral)
9. McGregor, C., Sandlin, K., J. Prothro, C. McGregor, A. Heesacker, N. Khalilian, R. Okashah, W. Xiang, E. Bachlava, D. Caldwell, D. Seymour, V. White, E. Chan, G. Tolla, C. White, D. Safran, E. Graham, and S. Knapp. 2011. Comparative mapping within *Citrullus lanatus*. Plant and Animal Genome XIX, San Diego, CA. (Oral)
10. Sandlin, K., J. Prothro, C. McGregor, A. Heesacker, N. Khalilian, R. Okashah, W. Xiang, E. Bachlava, D. Caldwell, D. Seymour, V. White, E. Chan, G. Tolla, C. White, D. Safran, E. Graham, and S. Knapp. 2011. QTL analysis of horticultural traits in an elite watermelon (*C. lanatus* var. *lanatus*) recombinant inbred line population. Plant and Animal Genome XIX, San Diego, CA. (Poster)
11. Thiessen, M., C. Gillett, D. LaBonte, C. Clark, and C. McGregor. 2010. Effect of vine cutback on disease resistance and severity of virus titres on resistant and susceptible varieties. Southern Region of the American Society for Horticultural Science, Annual Meeting, Orlando FL. (Oral)

Conference/workshop/retreat/ symposium attendance (not mentioned elsewhere)

Local

- The Plant Center Retreat. (2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 & 2016)
- Institute of Plant Breeding, Genetics & Genomics Retreat. (2008, 2009, 2011, 2012, 2013, 2014, 2015 & 2016)
- The Plant Center Symposium. (2009, 2010, 2011, 2012, 2013, 2014, 2015 & 2016)
- Proposal Writing Workshop, College of Veterinary Medicine. (2009)
- Agricultural Systems Research Workshop. (2010)

National

- Southern Region ASHS, Atlanta, GA. (2009)
- American Phytopathological Society Meeting, Portland, OR. (2009)
- Grantsmanship Workshop on Integrated Research, Education, and Extension Competitive Programs, Las Vegas, NV. (2009)
- Plant and Animal Genome Conference, San Diego, CA. (2010)
- Southern Region ASHS, Orlando, FL. (2010)
- Cucurbitaceae 2010, Charleston, SC. (2010)

International

- Agricultural Research Connections (ARC) workshop on Biotic Stress in Crop Plants, Nairobi Kenya. (2010) *Attendance funded by Bill and Melinda Gates Foundation.*

5. PUBLIC SERVICES PERFORMED

1. Extension

Extension Lectures

- Seed saving lecture at Organic Farming Workshop (2013 & 2016)
- Talking Watermelon; Talking Biotech Podcast (2016)
- Advances in Watermelon Breeding. Southeast Regional Fruit & Vegetable Conference, Savannah, GA (2016)

Industry group meetings attended

- Georgia Fruit and Vegetable Growers Association, Annual Meeting, Savannah, GA. (2009, 2010, 2011, 2012)
- Crisp county watermelon field day, Cordele, GA. (2009)
- Georgia Watermelon Association Annual Meeting, Lake Blackshear, GA. (2012)

6. OTHER SERVICES

1. Service to Professional Societies

American Society for Horticultural Science

- Undergraduate paper competition judge at annual Southern regional ASHS meeting, Orlando, FL. (2010)
- Chair of the 'Post Harvest/Plant Biotechnology section at annual Southern regional ASHS meeting, Orlando, FL. (2013; 2017)
- Member of the 'Watermelon' Working Group (2009 to present)

Cucurbit Genetics Cooperative

- Watermelon gene curator. (May 2013 to present).

Cucurbit Crop Germplasm Committee

- Member. (2013 to present)

2. Reviewer

Reviewer for Peer Reviewed Publications

- Reviewer for 19 journals; 42 manuscripts.

Grant Reviews

- Chief Scientist of the Israeli Ministry of Agriculture Fund. Proposal review
- South Africa's National Research Foundation (NRF).
- USDA NIFA Grant Review. Sept. 2015

3. Committee Memberships and Offices Held (*Contributions to Governance*)

Horticulture Department

- Graduate Faculty member (2007 – present)
- Member of the Search Committee for Assistant/Associate Professor of Horticulture (Vegetable Extension) (2012)
- Member of the Durham Farm Advisory Committee (2011 – present)
- Horticulture Graduate Admissions Committee. (Dec. 2010 to present)
- Horticulture Seminar Series Coordinator (2015 to present)

Institute of Plant Breeding Genetics and Genomics

- Graduate Student Poster judge at PBGG Retreat. (2013)
- Agronomy Graduate Student Association poster competition judge. (2010)
- Graduate Program Curriculum Review Committee PBGG (2015; 2016)
- Graduate Student Poster Competition Organizer at PBGG Retreat. (2016)

College of Agricultural and Environmental Sciences

- Watermelon Research at UGA Symposium Organizer (2016)
- UGA Agronomic Cultivar and Germplasm Release Committee member. (Jan. 2010 to Jan. 2013; Jan 2016 - present)
- Cultivar Development Research Program Committee. (Oct 2015 - present)
- CAES Faculty Affairs and Grievances Committee member. (Aug. 2011 to July 2012; Aug. 2014 to present); 2011 to July 2012); chair (July 2012 to July 2014)
- Graduate student presentation judge at UGA Interdisciplinary Graduate Symposium. (2012; 2015).

University of Georgia

- UGA Academic Honesty Continued Discussion Panels. (Jan. 2012 to present)
- Member of The Plant Center Advisory Board. (July 2011 to 2014)
- Poster competition organizer, The Plant Center retreat. (2011, 2012)
- Poster competition judge, The Plant Center retreat. (2009)