

Gustavo C. MacIntosh

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1. Education

1993 Licenciatura (B.S./M.S.) Biology, Universidad Nacional de Mar del Plata, Argentina
1997 Ph.D. Biological Chemistry, Universidad de Buenos Aires, Argentina
1997-2001 Postdoctoral training, Michigan State University-DOE Plant Research Laboratory

2. Appointments

2012-present Associate Professor. Roy J. Carver Department of Biochemistry, Biophysics and Molecular Biology and Plant Sciences Institute, Iowa State University
2003-2012 Assistant Professor. Roy J. Carver Department of Biochemistry, Biophysics and Molecular Biology and Plant Sciences Institute, Iowa State University
2002-2003 Associate Scientist. Delaware Biotechnology Institute, University of Delaware, Newark, DE
1997-2001 Visiting Postdoctoral Research Associate. MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI

3. Professional Affiliations

-Faculty, Roy J. Carver Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University
-Member of the Genetics and Genomics Graduate Program, Iowa State University
-Member of the Molecular, Cellular and Developmental Biology Program, Iowa State University
-Member of the Interdepartmental Plant Biology Graduate Program, Iowa State University
-Member of the Bioinformatics and Computational Biology Program, Iowa State University
-Member of the Laurence H. Baker Center for Bioinformatics and Biological Statistics, Iowa State University
-Member of the Center for Designer Crops, Plant Sciences Institute, Iowa State University
-Member of the American Society of Plant Biologists
-Member of the Society for Advancement of Chicanos/Hispanic and Native Americans in Science (SACNAS)
-Member of the American Society for Biochemistry and Molecular Biology
-Member of the Iowa Academy of Science

4. Awards, Honors, Recognitions

2017 Distinguished Iowa Scientist Award presented by the Iowa Academy of Science
2017 LAS Diversity Award, presented by the College of Liberal Arts and Sciences, Iowa State University
2016 Selected for the Linton-Poodry SACNAS Leadership Institute
2000 Award for outstanding presentation at the Fourth Annual Meeting of the Michigan RNA Society. East Lansing, Michigan.
1993 Award for highest academic achievement in class. B.S./M.S. degree, Universidad Nacional de Mar del Plata, Argentina.

5. Service, Appointments and Activities

5.1 Roy J. Carver Department of Biochemistry, Biophysics and Molecular Biology

2017 Department Chair Search Committee
2016 Third Year Review Committee (for E. Underbakke)
2013 Ad hoc Post-tenure review committees (2)
2012-present Chair, Undergraduate Scholarships Committee
2011 Ad hoc committee for collaborator faculty appointments
2008-2010 Comprehensive examination committee
2007 Ad hoc search committee for Administrative Specialist
2006-2012 College of Liberal Arts and Sciences Representative Assembly, BBMB Rep.

2005-2013 Graduate student recruiting (2012, Chair)

5.2 Iowa State University and College of Liberal Arts and Sciences

2017 Biotechnology Director Search Committee, Office of the Vice President for Research
 2015-2017 Associate Chair, Interdepartmental Plant Biology Program
 2015-2018 Biotechnology Council Member
 2015-2018 Carver Academy Faculty Council Member
 2015 Analytical Chemistry Faculty search committee, Department of Chemistry
 2013-2016 Faculty Development Committee, College of Liberal Arts and Sciences
 2012 Postdoctoral Individual Developmental Plan Task Force
 2012-present Genetics and Genomics Graduate Program Under-represented Recruitment Committee
 2011-2015 Supervisory Committee, Molecular, Cellular and Developmental Biology Graduate Program
 2009 and 2012 Organizer of the Loomis Lecture and Mini-symposium
 2007-2009 College of Liberal Arts and Sciences Representative Assembly, Executive Board
 2006-present Admissions Committee, Interdepartmental Plant Biology Graduate Program
 2005-2008 Graduate Student Admissions, Molecular, Cellular and Developmental Biology Graduate program
 2004 Chair of the Interdepartment Plant Biology Program retreat
 2004 Organizer of the Genetics and Genomics Graduate Program Workshop
 2004 Associate Chair for the Genetics and Genomics Graduate Program Retreat

5.3 National and Regional Activities

2017-2019 Chair, Minority Affairs Committee, American Society for Plant Biologists (ASPB)
 2017-2020 Representative to the National ASPB Executive Committee, American Society of Plant Biologists, Midwestern Section
 2016-2017 American Society of Plant Biologists, Midwestern Section, Chair
 2015-2016 American Society of Plant Biologists, Midwestern Section, Vice Chair
 2015 Mini-Symposium Organizer and Chair, American Society for Plant Biologists Annual Meeting, Minneapolis, July 2015
 2014 Mini-Symposium Organizer and Chair, American Society for Plant Biologists Annual Meeting, Portland, July 2014
 2013 Mini-Symposium Organizer and Chair, American Society for Plant Biologists Annual Meeting, Providence, July 2013
 2013-2017 Regular member, Minority Affairs Committee, American Society for Plant Biologists (ASPB)
 2013-2015 American Society of Plant Biologists, Midwestern Section Secretary/Treasurer
 2012 Adjunct member, Minority Affairs Committee, American Society for Plant Biologists (ASPB)
 2011-2012 Co-organizer of the 14th Biennial Molecular Biology of the Soybean Conference, Des Moines, August 2012
 2008 Organizer of the Annual Meeting of the American Society of Plant Biologists, Midwestern Region, March 2008
 2008 Iowa Soybean Association/ISU Strategic Advances in Soybean Research Team
 2007 Co-organizer of the First ISU Aphid Research Symposium, ISU, January 19, 2007

5.4 Technical Reviewer

2017- Academic Editor, Plant Direct (journal of the American Society of Plant Biologists and the Society for Experimental Biology)
 2016, 2017 Review Panel Member, MCB-Gene Expression Program, National Science Foundation
 2016 Review Panel Member, Pest and Beneficial Species in Plant Production Systems Program, National Institute of Food and Agriculture (NIFA) Agriculture and Food Research Initiative (AFRI)
 2015-2017 External Reviewer, Fondo para la Investigación Científica y Tecnológica (FONCyT), Agencia Nacional de Promoción Científica, Tecnológica y de Innovación (ANPCyT), Argentina
 2016 Ad hoc Reviewer, IOS-CAREER/Symbiosis, Defense and Self-recognition Program, National Science Foundation

- 2015 External Reviewer, National Science Centre, Poland
- 2015 Ad hoc Reviewer, Nebraska Experimental Program to Stimulate Competitive Research (EPSCoR)
- 2015 Ad hoc Reviewer, USDA Agriculture and Food Research Initiative (AFRI) Exploratory Research program
- 2014 Review Panel Member, MCB-Cellular Dynamics and Function Program, National Science Foundation
- 2014 Reviewer for the 8th Symposium on Undergraduate Research & Creative Expression, Iowa State University
- 2012 Reviewer for the Richardson Research Incentive Grants competition, Entomology Department, Iowa State University
- 2011, 2012 Reviewer for the Individual Research Grants Program, Israel Science Foundation
- 2009 Ad hoc Reviewer for the MCB-Biomolecular Systems Program, National Science Foundation
- 2009 Reviewer for the Iowa Center for Advanced Neurotoxicology Grant Program, Iowa State University
- 2006 Ad hoc Reviewer for the MCB-Biomolecular Systems Program, National Science Foundation
- 2006 Ad hoc Reviewer for the Plant Genome Research Program, National Science Foundation
- 2005, 2012 Reviewer for the Bailey Research Career Development Award competition, College of Agriculture and Life Sciences, Iowa State University
- 2004 Ad hoc Reviewer for the Plant Genome Research Program, National Science Foundation

5.5 Manuscript reviewer for the following journals:

African Journal of Biotechnology, Annals of Botany, Arthropod-Plant Interactions, Autophagy, Biochemistry, Biochemistry Journal, BMC Genomics, BMC Plant Biology, Canadian Journal of Plant Sciences, Crop Science, EMBO Reports, FASEB Journal, In Silico Biology, International Journal of Molecular Sciences, Journal of Plant Physiology, Journal of Molecular Evolution, Journal of Experimental Botany, Methods, Molecular Plant Pathology, Molecular Plant-Microbe Interactions, PeerJ, Physiological and Molecular Plant Pathology, Phytochemistry, Plant and Cell Physiology, Plant Cell, Plant Cell Reports, Plant Physiology, Plant Physiology and Biochemistry, Planta, Plant Journal, Plant Molecular Biology, Plant Science, PLoS GENETICS, PLoS ONE, Scientific Reports

6. Refereed Publications (§ = at ISU, *= corresponding author)

1. §Morriss S, Liu X, Floyd B, Bassham D, **MacIntosh GC*** (2017) Cell growth and cellular homeostasis are affected in *Arabidopsis thaliana rns2* mutants that lack the main vacuolar ribonuclease activity. *Annals of Botany*, in press.
2. §Bassham DC, **MacIntosh GC*** (2017) Degradation of cytosolic ribosomes by autophagy-related pathways. *Plant Science* 262: 169-174
3. §Morriss S, Studham M, Tylka GL, **MacIntosh GC*** (2017) Validation of a hairy roots system to study soybean-soybean aphid interactions. *PLoS ONE*, 12(3): e0174914. doi.org/10.1371/journal.pone.0174914
4. §Floyd BE, Mugume Y, Morriss SC, **MacIntosh GC***, Bassham DC (2017) Localization of RNS2 ribonuclease to the vacuole is required for its role in cellular homeostasis. *Planta* 245: 779–792
5. §Klionsky DJ, et al (2016) Guidelines for the use and interpretation of assays for monitoring autophagy (2nd edition). *Autophagy* 12: 1-222
6. § Hillwig MS, Chiozza M, Casteel CL, Lau ST, Hohenstein J, Hernández E, Jander G, **MacIntosh GC*** (2016) Abscisic acid deficiency increases defense responses against *Myzus persicae* in *Arabidopsis*. *Molecular Plant Pathology* 17 : 225-235
7. §Kanobe C, McCarville MT, O'Neal M, Tylka GL, **MacIntosh GC*** (2015) Aphid infestations induce changes in fatty acid metabolism in soybean. *PLoS ONE*, 10(12): e0145660. doi:10.1371/journal.pone.0145660.
8. § Floyd BE, Morriss SC, **MacIntosh GC***, Bassham DC (2015) Evidence for autophagy-dependent and -independent pathways of rRNA turnover in *Arabidopsis*. *Autophagy* 11, 2199-2212.

9. [§]Klein AT, Yagnik GB, Hohenstein JD, Ji Z, Zi J, Reichert MD, **MacIntosh GC**, Yang B, Peters RJ, Vela J, Lee YJ (2015) Investigation of the Chemical Interface in the Soybean–Aphid and Rice–Bacteria Interactions Using MALDI-Mass Spectrometry Imaging. *Anal Chem*, 87, 5294–5301.
10. [§]Rojas H, Floyd B, Morriss S, Bassham D, **MacIntosh GC***, Goldraj A (2015) NnSR1, a class III non-S-RNase specifically induced in *Nicotiana glauca* under Pi deficiency, is localized in endoplasmic reticulum compartments. *Plant Science* 236, 250-259.
11. [§]Ambrosio L, Morriss S, Riaz A, Bailey R, Ding J, **MacIntosh GC*** (2014) Phylogenetic analyses and characterization of RNase X25 from *Drosophila melanogaster* suggest a conserved housekeeping role and additional functions for RNase T2 enzymes in protostomes. *PLoS ONE* 9(8): e105444. doi:10.1371/journal.pone.0105444
12. [§]Hesler LS, Chiozza MV, O' Neal ME, **MacIntosh GC**, Tilmon KJ, et al. (2013) Performance and prospects of Rag genes for management of soybean aphid in soybean. *Entomol Exp Appl*, 147: 201–216.
13. [§]Studham ME, **MacIntosh GC*** (2013) Multiple phytohormone signals control the transcriptional response to soybean aphid infestation in susceptible and resistant soybean plants. *Mol Plant Microbe Interact.* 26:116-29. **(Image selected for journal cover)**
14. [§]McCarville MT, Kanobe C, O'Neal ME, **MacIntosh GC**, Tylka GL (2012) Effects of an insect–nematode–fungus pest complex on grain yield and composition of specialty low linolenic acid soybean. *Crop Protection* 42: 210-216
15. [§]Floyd BE, Morriss SC, **MacIntosh GC**, Bassham DC (2012) What to Eat: Evidence for Selective Autophagy in Plants. *J Integrative Plant Biology* 54: 907–920
16. [§]Studham ME, **MacIntosh GC*** (2012) Phytohormone signaling pathway analysis method for comparing hormone responses in plant-pest interactions. *BMC Res Notes* 5:392
17. [§]McCarville MT, O'Neal M, Tylka GL, Kanobe C, **MacIntosh GC** (2012) A nematode, fungus, and aphid interact via a shared host plant: implications for soybean management. *Entomol Exp Appl* 143: 55-66
18. [§]**MacIntosh GC***, Bassham DC (2011) The connection between ribophagy, autophagy and ribosomal RNA decay. *Autophagy*, 7: 662-663
19. [§]McCarville MT, Kanobe C, **MacIntosh GC**, O'Neal M (2011) What is the economic threshold of soybean aphids *Aphis glycines* Matsumura (Hemiptera: Aphididae) in enemy free space?. *J Econ Entomol* 104: 845-852
20. [§]Hillwig MS, Contento AL, Meyer A, Ebany D, Bassham DC, **MacIntosh GC*** (2011) RNS2, a conserved member of the RNase T2 family, is necessary for ribosomal RNA decay in plants. *Proc Natl Acad Sci USA* 108: 1093-1098
21. [§]Haud N, Kara F, Diekmann S, Henneke M, Willer JR, Hillwig MS, Gregg RG, **MacIntosh GC**, Gärtner J, Alia A, Hurlstone AF (2011) *rnaset2* mutant zebrafish model familial cystic leukoencephalopathy and reveal a role for RNase T2 in degrading ribosomal RNA. *Proc Natl Acad Sci USA* 108: 1099-1103
22. [§]Hillwig MS, Kanobe C, Thornburg RW, **MacIntosh GC*** (2011) Identification of S-RNase and peroxidase in petunia nectar. *J Plant Physiol* 168: 734–738
23. [§]Hillwig MS, Liu X, Liu G, Thornburg RW, **MacIntosh GC*** (2010) Petunia nectar proteins have ribonuclease activity. *J Exp Bot* 61: 2951-2965
24. [§]**MacIntosh GC***, Hillwig MS, Meyer A, Flagel L (2010) RNase T2 genes from rice and the evolution of secretory ribonucleases in plants. *Mol Genet Genomics* 283: 381-396.
25. [§]Chiozza MV, O'Neal ME, **MacIntosh GC*** (2010) Constitutive and Induced Differential Accumulation of Amino Acid in Leaves of Susceptible and Resistant Soybean Plants in Response to the Soybean Aphid (Hemiptera: Aphididae). *Environmental Entomology* 39: 856-864
26. [§]Hillwig MS, Rizshsky L, Wang Y, Umanskaya A, Essner JJ, **MacIntosh GC*** (2009) Zebrafish RNase T2 genes and the evolution of ribonucleases in animals. *BMC Evolutionary Biology* 9:170. doi:10.1186/1471-2148-9-170
27. [§]Studham M, **MacIntosh GC***, Avendano MF, Soh D, Tylka G, (2009). The soybean resistance gene *Rag1* does not protect against soybean cyst and root knot nematodes. *Plant Health Progress* doi:10.1094/PHP-2009-0401-01-BR.
28. [§]Hillwig MS, LeBrasseur ND, Green PJ and **MacIntosh GC*** (2008) Impact of transcriptional, ABA-dependent, and ABA-independent pathways on wounding regulation of RNS1 expression. *Mol Genet Genomics* 280: 249-261 **(Image selected for 2009 journal cover)**

29. Raíces M, **MacIntosh GC**, Ulloa RM, Gargantini PR, Vozza NF, Tellez-Inon MT (2003) Sucrose increases calcium-dependent protein kinase and phosphatase activities in potato plants. *Cell Mol Biol* 49: 959-964
30. Raíces M, Ulloa RM, **MacIntosh GC**, Crespi M and Tellez-Inon MT (2003) StCDPK1 is expressed in potato stolon tips and is induced by high sucrose concentration. *J Exp Bot* 54: 2589-2591
31. LeBrasseur ND, **MacIntosh GC**, Pérez-Amador MA, Saitoh M and Green PJ (2002) Local and systemic wound-induction of RNase and nuclease activities in Arabidopsis: RNS1 as a marker for a JA-independent systemic signaling pathway. *Plant J* 29: 393-403
32. Ulloa RM, Raíces M, **MacIntosh GC**, Maldonado S and Téllez-Iñón MT (2002) Jasmonic acid affects plant morphology and the expression and activity of a Calcium-dependent protein kinase in *Solanum tuberosum*. *Physiol Plantarum* 115: 417-427
33. **MacIntosh GC**, Wilkerson C and Green PJ (2001) Identification and analysis of Arabidopsis expressed sequence tags characteristic of non-coding RNAs. *Plant Physiol* 127: 765-776.
34. **MacIntosh GC**, Bariola PA, Newbigin E and Green PJ (2001) Characterization of Rny1, the *Saccharomyces cerevisiae* member of the T2 RNase family of ribonucleases: Novel functions for ancient enzymes? *Proc Natl Acad Sci USA* 98: 1018-1023
35. Gutiérrez RA, **MacIntosh GC** and Green PJ (1999) Current perspectives on mRNA stability in plants: multiple levels and mechanisms of control. *Trends Plant Sci* 4: 429-438
36. Bariola PA, **MacIntosh GC** and Green PJ (1999) Regulation of S-Like Ribonuclease levels in Arabidopsis. Antisense inhibition of RNS1 or RNS2 elevates anthocyanin accumulation. *Plant Physiol* 119: 331-342
37. Ogueta SB, **MacIntosh GC** and Téllez-Iñón MT (1998) Stage-specific substrate phosphorylation by a Ca²⁺/calmodulin-dependent protein kinase in *Trypanosoma cruzi*. *J Eukaryotic Microbiol* 45: 392-396
38. Ulloa RM, **MacIntosh GC**, Melchiorre M, Mentaberry AN, Dallari P, Moriconi DN, Téllez-Iñón MT (1997). Protein kinase activity in different stages of potato (*Solanum tuberosum* L.) microtuberization. *Plant Cell Reports* 16: 426-429
39. **MacIntosh GC**, Ulloa RM, Raíces M and Téllez-Iñón MT (1996). Changes in Calcium-dependent Protein Kinase activity during “in vitro” tuberization in potato (*Solanum tuberosum*, L.). *Plant Physiol* 112: 1541-1550
40. Ogueta SB, **Mac Intosh GC** and Téllez-Iñón MT (1996). Characterization of an autonomous Ca²⁺/Calmodulin-Dependent Protein Kinase from *Trypanosoma cruzi*. *Mol Biochem Parasitol* 78: 171-183. The first two authors contributed equally to this paper.
41. Ogueta SB, **MacIntosh GC** and Téllez-Iñón MT (1993). Characterization and regulation of CaM KII of epimastigote forms of *T.cruzi*. *Memorias do Instituto Oswaldo Cruz* 88, Suppl I, 138

Submitted:

In preparation:

42. §Studham ME, Hohenstein JD, Kovicich N, Klein AT, Grotewold E, Lee YJ, **MacIntosh GC*** (2017) Soybean transcriptome changes in response to long-term aphid colonization identify a role for isoflavones in the defense response against the herbivore.
43. §Ibore M, Hohenstein JD, Mamo TA, **MacIntosh GC***, Singh AK (2017). Identification of new sources of resistance to soybean aphids (*Aphis glycines*) and discovery of novel candidate resistance genes using genome-wide association studies.
44. §Kanobe C, Hohenstein J, **MacIntosh GC*** (2017) Repression of jasmonic acid dependent defenses by *Aphis glycines* via modulation of foliar fatty acid composition.
45. §Ibore M, Hohenstein JD, Graham MA, Singh AK, **MacIntosh GC*** (2017). Unveiling the synergistic effect of stacking *Rag1* and *Rag2* aphid-resistance genes in soybean using RNA sequencing.
46. §Hohenstein JD, Ibore M, Graham MA, Maier TR, Baum TJ, Singh AK, **MacIntosh GC*** (2017). Dissecting plant-mediated pest interactions in soybean: systemic effects of aphid infestation.

Book Chapters

47. **MacIntosh GC*** (2011) RNase T2 Family: Enzymatic Properties, Functional Diversity, and Evolution of Ancient Ribonucleases. In AWW Nicholson, ed, Ribonucleases, Vol 26. Springer Berlin Heidelberg, pp 89-114

7. Research Proposals

7.1 Proposals Pending Review

- North Central Soybean Research Program, Harnessing soybean chemical defenses to improve resistance against pathogens and pests, 2017-2020, **\$723,389, Principal Investigator**

7.2 Proposals Funded

- University Research Grant, Iowa State University, Role of RNA catabolism during embryogenesis, 2005, **\$15,000, Principal Investigator**
- Roy J. Carver Charitable Trust (06-2323), Secreted ribonucleases as regulators of RNA silencing, 2005-2008, **\$300,795, Principal Investigator**
- Iowa Soybean Association, Determining the impact of multiple pests on soybean yield and grain composition, 2007-2010, **\$300,326, Principal Investigator**
- Crop Protection Research Initiative - Plant Sciences Institute-ISU, 2007-2010, **\$425,000, Co-Principal Investigator** (PI: Allen Miller)
- Iowa Soybean Association, Aphid-crop interactions, 2007-2010, **\$90,000, Co-Principal Investigator** (PI: Allen Miller)
- Innovative Research Grant, Plant Sciences Institute-ISU, Regulation of the small RNA transcriptome as an effective defense avoidance mechanism by aphids, 2009-2010, **\$59,759, Principal Investigator**
- Iowa Soybean Association, Exploring soybean aphid and soybean cyst nematode interactions for improved integrated management in Iowa, 2011-2014, **\$312,852, Co-Principal Investigator** (PI: Matthew O'Neal)
- Iowa Soybean Association, Novel control mechanisms for aphid resistance in soybean, 2011-2013, **\$109,055, Principal Investigator**
- National Science Foundation, Role of RNS2 in ribosome recycling via ribophagy, 2011-2016, **\$932,620, Principal Investigator**
- Iowa Soybean Association, Development of multiple pest resistant soybeans for breeding and research purposes using field and molecular tools, 2013-2016, **\$310,348, Co-Principal Investigator** (PI: Asheesh Singh)
- Iowa Soybean Association, Role of Ethylene on Soybean Sudden Death Syndrome - Potential Use for Disease Management, 2013-2016, **\$197,800, Co-Principal Investigator** (PI: Leonor Leandro)
- Innovative Research Grant, Plant Sciences Institute-ISU, Chemical Imaging of Plant-Pathogen and Plant-Insect Interactions, 2013-2015, **\$119,967, Co-Principal Investigator** (PI: Young-Jin Lee)
- National Science Foundation, Molecular and Cellular Bioscience Program, Autophagy-dependent and -independent mechanisms of RNA transport to the vacuole and their role in rRNA turnover and cellular homeostasis, 2017-2021, **\$899,991, Principal Investigator**

8. Teaching and mentorship activities

8.1. Courses taught

- BBMB681: Advanced Seminar (S 04)
- GEN591: Workshop in Genetics (S 04)
- BBMB102: Introduction to Biochemistry Laboratory (S 05)
- BBMB502: Comprehensive Biochemistry II (S 05-10)
- BBMB675: Nucleic Acid Structure and Function (F 05-08)

- BBMB411: Techniques in Biochemical Research (F 09-12)
- BBMB404 XW: Biochemistry I, distance learning (S 11)
- BBMB 301: Survey of Biochemistry (S 12, F 13)
- BBMB 593: Workshop in Biochemistry and Biophysics (S 13-17)
- BBMB 510X: Biochemistry and Molecular Biology of RNA (F 14-16)
- BIOL 314: Principles of Molecular Cell Biology (F 17)

8.2. Graduate Students Mentor

- Saralyn Ohanian, M.S., Molecular, Cellular and Developmental Biology Program. Graduated July 2007
- Mariana Chiozza, M.S., Interdepartmental Genetics Program. Graduated July 2009.
- Melissa Hillwig, Ph.D., Interdepartmental Genetics Program. Graduated December 2009.
- Matthew Studham, Ph.D., Bioinformatics and Computational Biology (BCB). Graduated June 2010.
- Charles Kanobe, Ph.D., Interdepartmental Genetics Program. Graduated December 2012.
- Ayesha Riaz, M.S., Interdepartmental Genetics Program. Graduated December 2014.
- Khoi Nguyen, B.S./M.S., Biochemistry Program. Graduated August 2015.
- Stephanie Morriss, Ph.D., Biochemistry Program. Graduated June 2016.
- Jessica Hohenstein, Ph.D., Interdepartmental Genetics Program. Graduated July 2017.
- Martha Ibore, Ph.D., Interdepartmental Genetics Program. Graduated July 2017.

Currently Serves or Served on Program of Study Committee: 35 graduated, 15 current

8.3 Other teaching and advising efforts:

- Invited lecture for ENT571: Insect Ecology (F 08)
- Panel speaker for Preparing Future Faculty (F 06, 07, 08, 09, 10, 11)
- Participated in a video on model systems for BIOL313L (F 08)
- Invited lectures for BBMB 675 (F 10, F 12)
- Invited lecture for PI P 574: Plant Nematology (Summer 11, Summer 13)
- Invited speaker for freshman seminar course, Grand View University (F 10, 11, 12, 13)
- Invited speaker, panel on science careers, George Washington Carver program and Molecular Biotechnology REU program (Summer 2012)
- Invited lecture for PI P 692: Molecular Biology of Plant-Pathogen Interactions (F12, F14, F16)
- Facilitator, REU Mentor Training Workshop at Iowa State University (Summer 13-14)
- Faculty Advisor, MEDLINE ISU, 2011-2013
- Faculty Advisor, BBMB Undergraduate Club, 2012-2017
- Faculty Advisor, Stupka Undergraduate Research Symposium, 2012-2017
- Faculty Advisor, ISU SACNAS Chapter, 2013-2017
- Faculty Advisor, ISU Women Rugby Club, 2014-2017

9. Diversity efforts

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| 2017-2019 | Chair, Minority Affairs Committee, American Society for Plant Biologists (ASPB) |
| 2010-present | Founder and current advisor, ISU chapter of the American Society for the Advancement of Chicanos/Hispanics and Native American in Science (SACNAS) |
| 2010-present | Chair, URM Recruitment Committee, Genetics and Genomics Graduate Program, ISU, |
| 2015-present | Member, George Washington Carver Academy Faculty Council, |
| 2007-present | NASA Scholars/SCIENCE BOUND mentor |
| 2007-present | McNair Scholars mentor |
| 2012-2017 | Member, Minority Affairs Committee, American Society for Plant Biologists (ASPB), |
| 2016 | Participant, Linton-Poodry SACNAS Leadership Institute |
| 2010 | Participant, NSF and ASBMB Minority Affairs Committee Workshop, A Comprehensive Assessment of the Barriers, Needs and Challenges Facing Underrepresented Minority Faculty in Biochemistry and Molecular and Cellular Biology |