

CURRICULUM VITAE

PERSONAL

Name: Thomas P. Clausen
Born: December 27, 1951
Fairbanks, Alaska
Address: Dept. of Chemistry & Biochemistry
University of Alaska Fairbanks
Fairbanks, Alaska 99775-6160
(907) 474-5512
e-mail tpclausen@alaska.edu
Website <http://www.uaf.edu/chem/>

EDUCATION

B.S. in Chemistry/Mathematics, Univ. of Alaska, 1975
Ph.D. in Chemistry, Michigan State Univ., 1980

POSITIONS HELD

Department Chair of Chemistry and Biochemistry; University of Alaska, Fairbanks, Alaska, 1999-2008.
Professor of Chemistry, University of Alaska, Fairbanks, Alaska, 1998-present
Associate Professor of Chemistry, University of Alaska, Fairbanks, Alaska, 1996-1998.
Assistant Professor of Chemistry, University of Alaska, Fairbanks, Alaska, 1994-1996.
Laboratory Coordinator, University of Alaska, Fairbanks, Alaska, 1991-1994.
Safety Officer, College of Natural Sciences, University of Alaska, Fairbanks, Alaska. 1991-2000.
Research Associate, University of Alaska, Fairbanks, Alaska. 1982-present.
Instructor of Chemistry, University of Alaska, 1982-1991.
Safety Officer, UAF Risk Management. 1990-1991.
Instructor of Mathematics, University of Alaska, 1990-1991.
Instructor of Mathematics, Tanana Valley Community College, Fairbanks, Alaska, 1982-84.
Assistant Professor of Chemistry, Kean College, Union, New Jersey, 1980-82.
Teaching Assistant, Michigan State University, Lansing, Michigan. 1975-80
Teaching Assistant, University of Alaska, 1974
1984

PUBLICATIONS AND MANUSCRIPTS (Undergraduate students are marked by a *)

1. T.P. Clausen. 1980. Ph.D. Thesis. Multinuclear NMR Study on the Highly Bridged Aryl Substituted Coates Cation and Similar Studies on the Classical Aryl Substituted 2-Adamantyl and 7-Norbornyl Cations.
2. D.G. Farnum, and T.P. Clausen. 1981. ^{13}C NMR of Aryl Substituted Cations: The Sigma-Bridged Coates Cation and the 2-Adamantyl Cation. **Tetrahedron Letters**. 22:549-552.
3. G.A. Olah, G.K. Surya Prakash, D.G. Farnum and T.P. Clausen. 1983. Comments on the Application of the Gassman-Fentiman Tool of Increasing Electron Demand

- to the ^{13}C Nuclear Magnetic Resonance Spectroscopic Study of Substituted 2-Aryl-2-Norbornyl Cations. **Journal of Organic Chemistry** 2146.
4. J.P. Bryant, G.D. Wieland*, T.P. Clausen and P. Kuropat. 1985. Interactions of Snowshoe Hares and Feltleaf Willow (*Salix alaxensis*) in Alaska. **Ecology**.66:1564-1573.
 5. P.B. Reichardt, J.P. Bryant, T.P. Clausen and G.D. Wieland*. 1984. Defense of Winter-Dormant Alaska Paper Birch Against Snowshoe Hare. **Oecologia (Berlin.)**. 65:58-69.
 6. J.P. Bryant, F.S. Chapin III, P.B. Reichardt and T.P. Clausen. 1985. Adaptation to Resource Availability as Determinant of Chemical Defense Strategies in Woody plants. Pages 219-237 In T. Swain and G. Cooper-Driver (eds.). **Recent Advances in Phytochemistry**, Vol. 19.
 7. J.P. Bryant, F.S. Chapin III, T. Clausen and P. Reichardt. 1987. Effect of Resource Availability upon the Woody Plant-Mammal Interaction. In: "Proceedings-Symposium on Plant-Herbivore Interactions," F.D. Provenza, J.T. Flinders, and E.D. McArthur, eds., Intermountain Forest Service, Ogden, UT., 37-42.
 8. J.P. Bryant, F.S. Chapin, III, P.B. Reichardt and T.P. Clausen. 1987. Response of Winter Chemical Defense in Alaska Paper Birch and Green Alder to Manipulation of Plant Carbon/Nutrient Balance. **Oecologia (Berlin)**.72:510-514.
 9. J.P. Bryant, T.P. Clausen, P.B. Reichardt, M.C. McCarthy* and R.A. Werner. 1987. Effect of Nitrogen Fertilization upon the Secondary Chemistry and Nutritional Value of Quaking Aspen (*Populus tremuloides* Michx.) Leaves for the Large Aspen Tortrix (*Choristoneura conflictana* (Walker)). **Oecologia (Berlin.)**. 73:513-517.
 10. T.P. Clausen, P.B. Reichardt and J.P. Bryant. 1986. Pinosylvin and Pinosylvin Methyl Ether as Feeding Deterrents in Green Alder. **Journal of Chemical Ecology** 12:2117-2131.
 11. B.R. Mattes, T.P. Clausen and P.B. Reichardt. 1987. Volatile Constituents of Balsam Poplar: The Phenol Glycoside Connection. **Phytochemistry**. 26:1361-1366.
 12. P.B. Reichardt, T.P. Clausen and J.P. Bryant. 1987. Plant Secondary Metabolites as Feeding Deterrents to Vertebrate Herbivores: Palatability Assays and Structure/Activity. In: "Proceedings-Symposium on Plant-Herbivore Interactions," F.D. Provenza, J.T. Flinders and E.D. McArthur, eds., Intermountain Forest Service, Ogden, UT., 3-8.
 13. T.P. Clausen. 1988. A Simple Apparatus for Continuous Steam Distillation. **Journal of Chemical Education** 65: 92.
 14. P.B. Reichardt, T.P. Clausen, and J.P. Bryant. 1988. Phenol Glycosides in Plant Defense Against Herbivores, In **Biologically Active Natural Products. Potential Use in Agriculture**, ACS Symposium Series, Vol. 380, H.G. Cutler, ed., American Chemical Society, Washington, D.C., 130-142.

15. P.B. Reichardt, T.P. Clausen and J.P. Bryant. 1988. A Critical Look at the Role of Phenol Glycosides in Plant Defense. In H.G. Cutler (ed.). Biologically active natural products. ACS Symposium Series. Natural Products for Potential Use in Agriculture. Pages 130-142.
16. T.P. Clausen, P.B. Reichardt, T. Evans*, and J.P. Bryant. 1989. A Simple Method for the Isolation of Salicortin, Tremulacin, and Tremuloiden from Quaking Aspen (*Populus tremuloides*). **Journal of Natural Products**, 52, 207-209.
17. T.P. Clausen, P.B. Reichardt, J.P. Bryant, R.A. Werner, K. Post*, and K. Frisby*. 1989. "A Chemical Model for Short-term Induction in Quaking Aspen (*Populus tremuloides*) Foliage Against Herbivores," **Journal of Chemical Ecology**, 15:2335-2346.
18. W.J. Jacobus, G.W. Gullion and T.P. Clausen. 1989. Ruffed Grouse Feeding Behavior and its Relationship to Secondary Metabolites of Quaking Aspen Flower Buds. **Journal of Chemical Ecology**, 15:1899-1917.
19. T.P. Clausen, P.B. Reichardt, J.P. Bryant, R.A. Werner. 1989. Long-Term and Short-Term Induction in Quaking Aspen: Related Phenomena? In Phytochemical Induction by Herbivores, D.W. Tallamy and M. J. Raupp (Eds.) John Wiley & Sons, Inc.
20. P.B. Reichardt, B.J. Anderson*, T.P. Clausen, and L.C. Hoskins. 1989. "Thermal Instability of Germacrone: Implications for Gas Chromatographic Analysis of Thermally Unstable Analytes," **Canadian Journal of Chemistry**, 67:1174-1177.
21. S. Armbruster, S. Keller, M. Matsuki, and T. Clausen. 1989. Pollination of *Dalechampia magnoliifolia* by Male Euglosian Bees. **American Journal of Botany**, 76:1279-1285.
22. T.P. Clausen, J.W. Keller, and P.B. Reichardt. 1990. Aglycon Fragmentation Accompanies β -Glucosidase Catalyzed Hydrolysis of Salicortin, A Naturally-Occurring Phenol Glycoside. **Tetrahedron Letters**, 31:4537-4538.
23. T.P. Clausen, F.D. Provenza, E.A. Burritt, P.B. Reichardt and J.P. Bryant. 1990. Ecological Implications of Condensed Tannin Structure: A Case Study," **Journal of Chemical Ecology**, 16:2381-2392.
24. F.D. Provenza, E.A. Burritt, T.P. Clausen, J.P. Bryant, P.B. Reichardt, and R.A. Distel. 1990. Food Aversion Learning in Goats: A Mechanism to Avoid Condensed Tannins in Blackbrush. **American Naturalist**, 136:810-828.
25. P.B. Reichardt, J.P. Bryant, B.R. Mattes, T.P. Clausen, F.S. Chapin III, and M. Meyer*. 1990. The Winter Chemical Defense of Alaskan Balsam Poplar Against Snowshoe Hares. **Journal of Chemical Ecology**, 16:1941-1960.
26. P.B. Reichardt, J.P. Bryant, B.J. Anderson*, D. Phillips*, T.P. Clausen, M. Meyer*, and K. Frisby*. 1990. Germacrone defends labrador tea from browsing by Snowshoe Hares. **Journal of Chemical Ecology**, 16:1961-1970.
27. J.P. Bryant, F.D. Provenza, J. Pastor, P.B. Reichardt, T.P. Clausen, and J.T. du Toit. 1991. Interactions Between Woody Plants and Browsing Mammals

Mediated by Secondary Metabolites. **Annual Reviews of Ecology and Systematics**, 22:431-436.

28. J.P. Bryant, K. Danell, F.P. Provenza, P.B. Reichardt, T.P. Clausen, and R.A. Werner. 1991. Effects of Mammal Browsing upon the Chemistry of Deciduous Woody Plants. In D.W. Tallamy and M.J. Raup (eds.). *Phytochemical Induction by Herbivores*. John Wiley and Sons, New York. Pages 135-154.
29. P.B. Reichardt, F.S. Chapin, III, J.P. Bryant, B.R. Mattes, and T.P. Clausen. 1991. Carbon/Nutrient Balance Does Not Fully Explain Patterns of Plant Defense in Alaskan Balsam Poplar. **Oecologia** 88:401-406.
30. P.B. Reichardt, T.P. Clausen, and J.P. Bryant. 1991. The Role of Phenol Glycosides in Plant/Herbivore Interactions. In Handbook of Natural Toxins. Vol. 6. Plant and Fungal Toxins. R. Keeler and A. Wu (Eds.). Marcel Dekker. Pages 313-335.
31. T.P. Clausen, P.B. Reichardt, J.P. Bryant, and R.A. Werner. 1991 Short-Term and Long-Term Induction in Quaking Aspen: Related Phenomenon? In D.W. Tallamy and M.J. Raup (eds.). Phytochemical Induction by Herbivores. John Wiley and Sons, New York. Pages. 71-83.
32. J.P. Bryant, F. Provenza, P.B. Reichardt, and T.P. Clausen. 1991. Mammal-Woody Plant Interactions. In "Herbivores: Their Interactions with Plant Secondary Metabolites, Vol 2. G.A. Rosenthal and M. Berenbaum (eds.), Academic Press, NY. Pages. 344-371.
33. J.P. Bryant, P.B. Reichardt, and T.P. Clausen. 1991. Effects of Global Warming on Woody Plant Secondary Metabolism in High Latitude Ecosystems. In "Physiological Ecology of Arctic Plants: Implications for Climate Change", F.S. Chapin, III, R. Jefferies, G. Schaver, J. Reynolds, and J. Sovboda (eds.), Academic Press, NY. In Press.
34. J.P. Bryant, P.J. Kuropat, P.B. Reichardt, and T.P. Clausen. 1991. Controls Over the Allocation of Resources by Woody Plants to Antiherbivore Defense. In "Plant Chemical Defenses Against Mammalian Herbivory", R.T. Palo and C.T. Robbins (eds.), CRC Press. In Press.
35. J.P. Bryant, P.B. Reichardt, and T.P. Clausen. 1992. Chemically-Mediated Interactions Between Woody Plants and Mammals: Management Implications. **Journal of Range Management**, 45:18-24.
36. T.P. Clausen, P.B. Reichardt, J.P. Bryant, and T. Sinclair. 1992. The Chemical Defense of Winter-Dormant Balsam Poplar: A Clarification. **Journal of Chemical Ecology**, 18:1505-1510.
37. W.S. Armbruster, A.L. Herzig and T.P. Clausen. 1992. Pollination of 2 sympatric Species of *Dalechampia* (Euphorbiaceae) in Surinam by Male Euglossine Bees. **Am. J. Botany**. 79:1374-1381.
38. C. Nichols-Orians, T.P. Clausen. 1992. 2'-Cinnamoylsalicortin, A New Phenol Glycoside Isolated From *Salix Sericea*. **Phytochemistry**. 31:2180-2181.

39. P.B. Reichardt, H.M. Merkin, T.P. Clausen, and J. Wu. 1992. Phenolic Glycosides from *Salix lasiandra*. **Journal of Natural Products**, 55:970-973.
40. J.P. Bryant, P.B. Reichardt, T.P. Clausen, and R.A. Werner. 1993 Effects of Mineral Nutrition on Delayed-Inducible-Resistance in Alaska Paper Birch. **Ecology**. 74:2072-2084.
41. T.P. Clausen, P.B. Reichardt, J.P. Bryant, and F. Provenza. 1992. Condensed Tannins in Plant Defense: A Perspective on Classical Theories. In: Plant Polyphenols. Synthesis, Properties, Significance (R.W. Hemingway and P.E. Laks, Eds.) New York: Plenum Press, pp. 639-652.
42. C.M. Nichols-Orians, R.S. Fritz, and T.P. Clausen. 1993. The Genetic Basis for Variation in the Concentrations of Phenolic Glycosides in *Salix sericea*. **Biochemical Systematics and Ecology**. 21:535-542.
43. T. Evans, P.B. Reichardt, T.P. Clausen and S.M. Chang. 1995. Structurally Intriguing Glucosides from Alaskan Littletree Willow (*Salix arbusculoides*). **Journal of Natural Products** 58:1897-1900.
44. B. Johnson*, T. Clausen and J. Wood*. 1996. A Mixed Aldol Condensation-Michael Addition Experiment for the Organic Laboratory. **Journal of Chemical Education** 73:266.
45. J.P. Schimel., K. van Cleve., R.G. Cates, T.P. Clausen, and P.B. Reichardt. 1996. Effects of Balsam Poplar (*Populus balsamifera*) Low Molecular Weight Phenolics on Microbial Activity in Taiga Floodplain Soil: Implications for Changes in N Cycling During Succession. **Canadian Journal of Botany** 74:84-90.
46. M. Ayers, T.P. Clausen, S.F. MacLean, A.M. Redman, and P.B. Reichardt. 1997. Diversity of structure and antiherbivore activity in condensed tannins. **Ecology**. 78:1696-1712.
47. W.S. Armbruster, J.J. Howard, T.P. Clausen, E. Debevec, J. Loquvam, M. Matsuki, B. Cerendolo*, and F. Andel*. 1997. Do Biochemical Exaptations Link Evolution of Defense and Pollination Systems? Historical Hypotheses and Experimental Tests with *Dalechampia* Vines. **American Naturalist** 149:461-484.
48. Z. Jianjun, S.G. Withers, P.B. Reichardt, E. Treadwell*, and T.P. Clausen. 1998. Salicortin: A Repeat-Attack New-Mechanism-Based *Agrobacterium faecalis* β -Glucosidase Inhibitor. **Biochemical Journal**. 332:367-371.
49. C.L. Whittle, R.T. Bowyer, T.P. Clausen, and L.K. Duffy. 2000 Putative Pheromones in Urine of Rutting Male Moose (*Alces alces*): Evolution of Honest Advertisement. **Journal of Chemical Ecology** 26:2747-2762.
50. J. Lokvam, J. Braddock, P.B. Reichardt and T.P. Clausen. 2000. Two New Polyphenylated Benzophenones from the Trunk Latex of *Clusia grandiflora*. **Phytochemistry** 55:29-34.
51. G. Vourc'h, J.L. Martin, P. Duncan, J. Escarre and T.P. Clausen. 2001. Defensive Adaptations of *Thuja plicata* to Ungulate Browsing: A Comparative Study Between Mainland and Island Populations. **Oecologia (Berl.)** 126:84-93.

52. T.J. Volz and T.P. Clausen. 2001. Tannins in *Puccinellia Arctica*: Possible Deterrents to Herbivory by Canada Geese. **Journal of Chemical Ecology** 27:725-732.
53. G. Vourc'h, B. Vila, D. Gillon, J. Escarre', F. Guibal., H. Fritz, T. Clausen, and J. Martin. 2002. Disentangling the causes of damage variation by deer browsing on young *Thuja plicata*. **Oikos**. 98:271-283.
54. C. Riggins and T.P. Clausen. 2003. Root Acetylenes from *Artemisia arctica*. **J. Biochemical Systematics**. 31:211-214.
55. E. Reiter, E. Treadwell, E. Cederstrom*, P.B. Reichardt, and T.P. Clausen. 2003. Diterpenes from *Colophospermum mopane*: Missing Links in the Biogenesis of 9,13-Epoxyabdanes. **Journal of Natural Products**. 66:30-33.
56. B. K. Hale, D. A. Herms, R. C. Hansen, T. P. Clausen, and D. Arnold. 2005. Effects of drought stress and nutrient availability on dry matter allocation, phenolic glycosides and rapid induced resistance of poplar to two Lymantriid defoliators. **Journal of Chemical Ecology**. 31:2601-2620.
57. T.P. Clausen, T.K Green, and B. Steiner*. Use of the chemical Literature as a Template to Probe Stereoselective Reactions by NMR. Currently under review by the J. Chem. Ed.
58. B.M. Englund, L. Griffeth*, and T. Clausen. A 9,13-Epoxyabdane from *Colophospermum Mopane*. Manuscript being revised for submission to Photochemistry
59. J.P. Bryant, T. P. Clausen, et al. (33 authors***). Fire is a template for a birch-hare selection mosaic. Manuscript being revised for submission to PNAS.
60. J. Lokvam, T.P. Clausen, D. Grapov, and T.A. Kursar. 2007. Golloyl Depsides of Tyrosine from Young Leaves of *Inga Laurina*. **Journal of Natural Products**. 70:134-136.
61. J.P. Bryant, Z. Feng, R.K. Swihart, J. Villalba, F. Provenza, L. Dziba, T. Clausen, and P. Reichardt. Toxin-regulated functional responses in browsing systems Submitted to **Oikos**.
62. Z. Feng, J. Bryant, R.K. Swihart, Ya Li, T. Clausen, P. Reichardt, J. Villalba, F. Provenza, L. Dziba. Modeling Vertebrate Herbivory When Toxins Affect Functional Responses. Submitted to **Am. Naturalist**.
63. P. Tomco and T. Clausen. A Novel Triterpenoid from Mountain Birch. The data collection for this paper has been completed and the paper will be submitted to **J. Nat. Prod.** over the Summer of 2007.