

## DEDICATION

This dissertation is dedicated to the collected works of Pink Floyd and Claude Debussy, which were constant companions while I wrote, and to the one person who earned this more than any other, and without whom I never even would have begun... for Kelly, with love and squalor.

Despite their ubiquity, abundance, and environmental diversity, the detailed study of their distributional and functional ecologies is still a young discipline. This is true to varying degrees between the three groups. Dictyostelid ecology has perhaps received the most attention, spurred by early work by Cavender and Raper (1965) and which has now accumulated into a large body of literature examining the genetic ecology of dictyostelid populations (eg. Fortunato *et al.*, 2003; Cavender, 2013; Landolt *et al.*, 2014). Work regarding the functional ecology of this group, however, has largely been limited to one species, the model organism *Dictyostelium discoideum* (Montagnes *et al.*, 2012). The ecology of myxomycetes has received less attention, though major efforts during the past two decades (eg. Liu *et al.*, 2015; Stephenson *et al.*, 2011; Stephenson and Feest, 2012; Stephenson, 2011) have begun to form a sharpening image of the distribution of this charismatic group. Lastly, and described most recently (Olive, 1967), the paraphyletic assemblage of protosteloid amoebae has received the least attention, likely due to their relatively inconspicuous fruiting bodies and lack of a current “model” member. Still, species in this diminutive group have been found in virtually every location and habitat where myxomycetes and dictyostelids have been observed (though they are less common in soils) and recent efforts have shown them to be globally ubiquitous (Chapter 2).

The greatest scarcity of information with all three of these groups concerns the environmental factors that influence their distributions (particularly at scales relevant to microbes) and the functional roles that they play in the systems where they are found. It has been shown that, at a broad-scale, precipitation patterns (Rollins *et al.*, 2010; Ogata *et al.*, 1996), latitude (Zahn *et al.*, 2014; Stephenson *et al.*, 2000; Perrigo *et al.*, 2012), and elevation (Landolt *et al.*, 2006; Rojas *et al.*, 2012) influence mycetozoan abundance, and that some taxa seem to show limited occurrence consistent with Foissner’s “moderate endemism” hypothesis

The Functional and Distributional Ecology of Mycetozoans under  
Changing Edaphic and Climatic Dynamics

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy in Biological Sciences

by

Geoffrey Lloyd Zahn  
Missouri State University  
Bachelor of Science in Biology, 2010

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University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

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Dr. Frederick W. Spiegel  
Dissertation Director

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Dr. Mary Savin  
Committee Member

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Dr. Steven L. Stephenson  
Committee Member

---

Dr. Burton H. Bluhm  
Committee Member

---

Dr. Kusum Naithani  
Committee Member

#### ACKNOWLEDGMENTS

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Last of all I would like to thank my wife, Lynne, for her unwavering support and encouragement. Without her by my side these last few years, this research project would never have been completed.

behavioral components and motivational aspects of the disorder should be combined to derive an acceptable definition; neither element can or should be ignored (Marmor, 1965). We choose, therefore, to define homosexual behavior as diverse sexual involvement ranging from covert to overt sexual activity, from solitary to multipartner involvement, from superficial to deep attachments, and from rare to frequent sexual activities motivated in adult life by a definite same sexed preferential erotic attraction.

The first scientifically reported treatment of homosexuality was by Kraft-Ebbing in 1934. His investigation was encouraged by an increased interest in the medical etiology of sexual deviations. Since Kraft-Ebbing, various forms of therapy have been used in the treatment of male homosexuality. In general, psychoanalytically oriented psychotherapy has been the prominent traditional treatment, but in recent years behavioral approaches have received increasing support, particularly those incorporating aversive conditioning procedures.

Aversive conditioning procedures have been successful in treating homosexuality (Feldman & MacCulloch, 1965), alcoholism (Franks, 1960), exhibitionism (Evans, 1968) and pedophilia

(Marshall, 1971). Eysenck (1971) specifies that aversion therapy is a behavioral technique principally used for disorders that are "socially undesirable or undesirable in the patient's own long term



EFFECT OF VISUAL STIMULI IN ELECTRIC  
AVERSION THERAPY

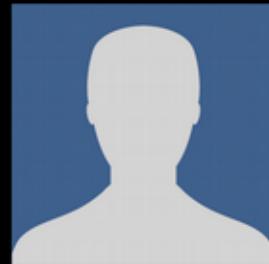
From 1972 – 1980, BYU administrators set up “stings” targeting students they thought might be gay and offered them a choice: Let us electrocute your penis or be expelled.

A Dissertation  
Presented to the  
Department of Psychology  
Brigham Young University

This dissertation research was undertaken to see if they could use clothed images instead of nude images to the same “effect.”

In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy

by  
Max Ford McBride  
August 1976

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## M. Ford McBride, PhD

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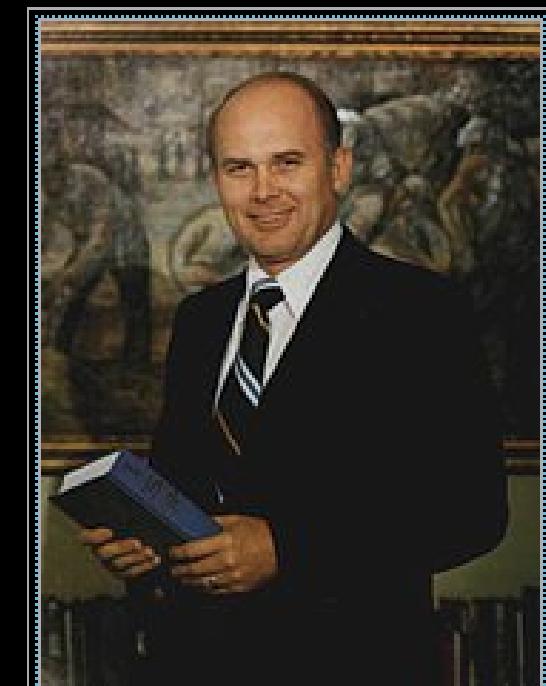
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What happened to the people electrocuting the genitals of gay men at BYU?



BYU president Oaks instituted a system of surveillance to identify and expel or attempt to "cure" homosexual students in the '70s.