

2008 Fall Seminar Series

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Preparing for Diverse Health Careers: A Student-Alum Panel

The first seminar of this semester's exciting schedule appropriately started with a heartening and invigorating presentation by a dedicated representative of the non-profit organization, Teach For America. He discussed, with real-life examples, how children's zip codes predetermine their opportunities for success. According to the presenter, this problem is predominantly due to a lack of sufficient educational programs in certain low-income areas. The presenter then explained how Teach For America provides a win-win opportunity for dedicated students that want experience in a leadership position, by paying them to teach underprivileged American children in their field of choice. Thus, this program puts passionate, energetic, and intelligent students in a position where they can actively ensure that all of America's children have a fair opportunity to attain the American dream. For more information on Teach for America visit their website at www.teachforamerica.org.

The second part of this seminar was a panel of five Lake Forest College alumni and advanced students currently pursuing careers in medicine. This group represented the full spectrum of the health industry, including everything from nurses to future veterinarians. However, even with such a diverse group of driven individuals, each of these students shared a great dedication and passion for medicine as a science and a practice. They discussed the road bumps and obstacles most students encounter when pursuing a career as a health care professional and offered some neat tricks to avoid them. For example, one participant suggested that one should avoid using short-term memory when studying for exams. Another suggestion was pursuing internships as a means of beefing up a resume. The alumni then explained how their use of on-campus resources, such as the career advancement center and the health professionals' advisory committee, helped them gain admission to graduate school. They recommend that all students pursuing graduate school do the same.

Why Do Neurons Die In Parkinsons Disease & How Can It Be Stopped



Dr. James Surmeier, Nathan Smith Davis - Professor and Chairman of Physiology, Northwestern Feinberg School of Medicine

In this thrilling presentation, Dr. James Surmeier explained his cutting-edge research on Parkinson's disease.

Parkinson's disease is a neurodegenerative disorder that is neurologically characterized by the death of dopaminergic neurons in the substantia nigra. The physical characteristics of this disease are shuffling gait, cramped writing, resting tremor, and bad balance.

Through rigorous research, Dr. Surmeier has formulated and experimentally supported a new theory for Parkinson's disease that has to do with the pulsing nature of the affected neurons. The pulsing of these neurons indirectly forces them to actively pump calcium ions out of the cell. Both the pulsing and the pumping of calcium require a large ATP demand from these neurons' mitochondria. This high metabolism can, in time, significantly increase the polluting toxins created by mass ATP synthesis. Dr. Surmeier believes that it is these toxins that weaken and eventually kill the dopaminergic neurons in the substantia nigra. This has led Dr. Surmeier to propose a drug that blocks calcium ion channels, Isradapine, as a possible medication to prevent and/or slow the progression of this terrible disorder. So far, this drug has shown great results in tests on rats and is soon to go through human trials.

Living With Wolves

Jim and Jamie Dutcher, Multiple Emmy Award-winning filmmakers and cinematographers.

Jim and Jamie Dutcher are not the average couple. This pair of avid environmentalist adventurers spent six years in Idaho's Saw Tooth Mountains raising and observing a pack of gray wolves. They recently produced their third video documentary and second novel of their once in a life-time experience. For this seminar, they played audio recordings they made of wolf howls and showed a sample of their video documentary, "Living with Wolves." In it, they portray the real wolf. Wolves are naturally reclusive, family-oriented, and surprisingly loving and friendly. They also have incredibly complex social organization; each pack has a leader, a runt, and many other social roles within the pack. Their research on the complexity of wolf social organization has taken our understanding of this animal to another level.

The Dutchers also strive to dispel the predominant myth that wolves pose a threat to humans, livestock, and game. According to the Dutchers, wolves are in fact responsible for less than 1% of all livestock mortalities. There has never been a confirmed case of a healthy wolf attacking a human in North America and wolves actually strengthen game by culling the old and sick. Clearly we as humans need to reevaluate these wonderful and mysterious creatures whom we fear so.

Understanding Multiple Sclerosis With A Viral Mouse Model



D'Anne Duncan '04, PhD Candidate, Microbiology-Immunology Dept, Northwestern University

This semester's seminar series was brought to a close with an enlightening presentation on multiple sclerosis by a recent graduate of Lake Forest College, Ms. D'Anne Duncan. Ms. Duncan graduated from Lake Forest College in 2004 and will soon defend her thesis at Northwestern University's graduate school.

Multiple sclerosis is an autoimmune disease wherein the body's T cells attack and destroy the protective myelin sheath covering neural axons. This eventually stops these neurons from working, thus creating physical symptoms such as memory loss, tingling sensations, and numerous other neurological problems. Ms. Duncan gave an in-depth discussion on her recent research on multiple sclerosis using a mouse model organism and her exciting findings. She uses a demyelinating virus to recreate the multiple sclerosis phenotype in the mice and then conducts state-of-the-art molecular biology assays to observe the role that microglia (the garbage men of the brain that activate Tcells) play in the onset and progression of this mysterious disorder.

Ms. Duncan is living evidence of the genuine quality of education taking place in the Lake Forest College science department and we at Eukaryon all wish her the best of luck on her coming dissertation.

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