# Eureka





### **EDITOR'S NOTE**

DARE TO DREAM
INTERVIEWS
GETTING INVOLVED IN RESEARCH: A GUIDE FOR INSPIRED UNDERGRADUATES
EUREKA: UNDERGRADUATES CAN PUBLISH TOO! 5 Christopher R. Madan
PUBLISHED ABSTRACTS
DEATH AND HAIRLESS CREATURES? ELUCIDATING EXISTENTIAL FACTORS IN THE EVOLUTION OF HUMAN BODY HAIR
Jordan L. Clemens, Jeff Schimel, & David Webber
METABOLIC ENGINEERED NEUROSPORA CRASSA IS A PROMISING SOURCE FOR BIODIESEL PRODUCTION: A TEAM ALBERTA iGEM PROJECT
THE PROPORTION OF EXCEPTION WORDS AND REGULAR WORDS IN A READING LIST INFLUENCES READING STRATEGIES IN BEHAVIOURAL AND fMRI DATA
ARTICLES
INFRARED NON-INVASIVE SUB-WAVELENGTH MICROSCOPY WITH METAMATERIALS
METAMATERIAL ENHANCED FLUORESCENCE DETECTION
REVIEWS
GENDER-SPECIFIC TREATMENT FOR FEMALE YOUNG OFFENDERS

#### **ABOUT THE FRONT COVER**

Artwork has always been a very therapeutic way of expressing my daily experiences. I enjoy using many media such as paint, pastel, pencil, and clay. Since I was a child I loved to take scraps of cardboard or wood and turn them into paintings or artistic pieces. Any form of artistic expression let me take time for myself, while producing a satisfying end product. I was always fascinated by the human body and I enjoy telling stories in my artwork through human figures. During my BSc undergraduate studies specializing in Psychology, I became very interested in turning course concepts into artwork or humorous comic strips. I figured that if I could express an academic concept in a few panels of a comic, then maybe it would create awareness of specific topics in general science and psychology. My passion for artwork and seeing the comical side to interesting concepts fuelled my desire to create a comic strip in The Gateway, the University of Alberta's student newspaper. Since 2007, my comic strip ID & EGO® has made references to topics I have come across throughout my undergraduate years such as: psychology, biological science, statistics, agriculture, political issues and popular culture.

Now as an MSc student in Neuroscience I still try to take the time to creatively express myself, whether it is a comic strip, painting, or a card for a friend. I truly believe the key to success is to keep a balanced life, especially in graduate school. Therefore not only is artwork enjoyable, but it helps manage stress and the end result is creating something beautiful, funny, or sometimes just plain odd.

The front cover image was inspired by the topics of the research papers submitted to this volume of Eureka.

**Lauren Alston** 



#### **ABOUT THE BACK COVER**

I grew up on an acreage situated east of Red Deer, Alberta. Growing up, I frequently found myself trying to catch things in the creek which ran through our property: wood frogs, water boatman, you name it! I do think that these times had some effect on how I directed my studies at university, but I never thought I would be conducting a wolf scat analysis for my summer NSERC research project.

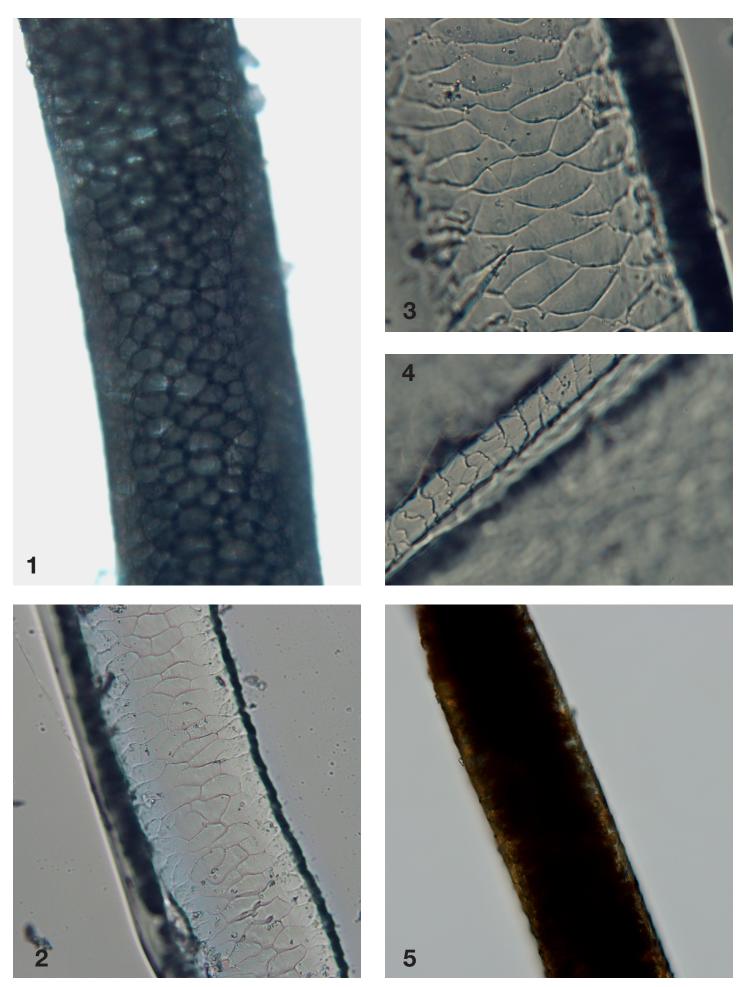
Part of the project entailed creating a hair identification key to differentiate between adult and juvenile ungulates (specifically mule deer, white-tailed deer, elk, moose and bighorn sheep) seen in summer wolf diets. At the time, to my knowledge there was no mammalian hair key was able to sufficiently differentiate between juvenile and adults of the major species in the North American Wolf's diet. Presented on the back cover are only a few of the many

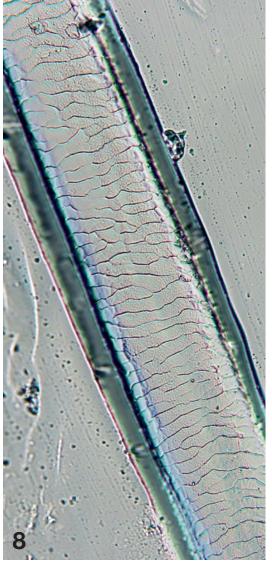
pictures which I took under various powers of magnification to complete the hair identification key. To tell the difference between ungulate species, one mostly uses the pattern of the outside cuticle scales of the hair. This can be quite difficult and take lots of time and practice to be proficient. So, try our little hair identification quiz to see if you have what it takes.

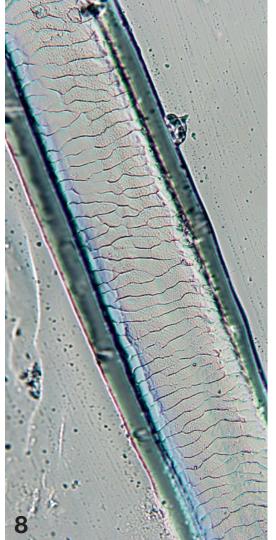
#### **Patrick Jones**

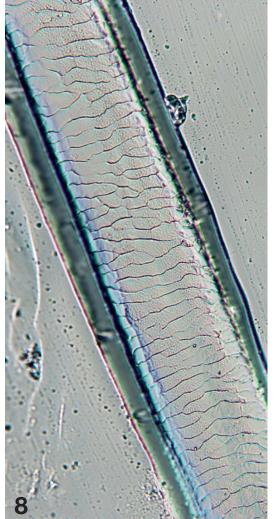
See page 34 for answer key.

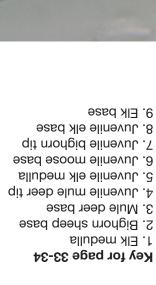


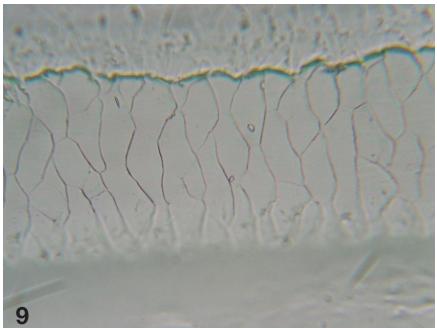












E. White-tailed deer tip

C. Elk dorsal hair root

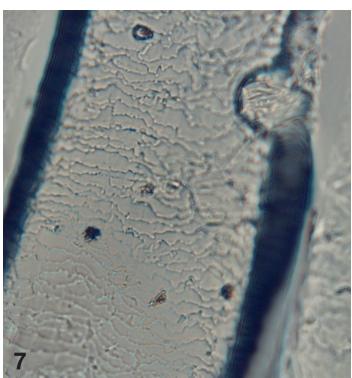
A. Juvenile bighorn medulla

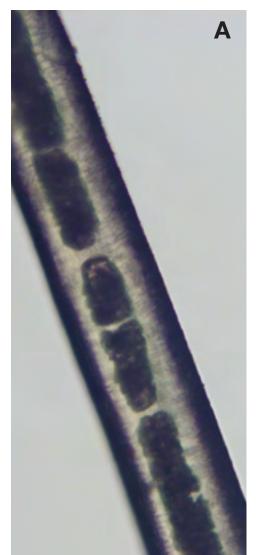
Key for the back cover

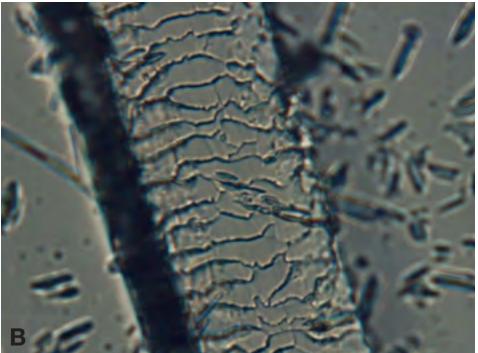
B. Mule deer base

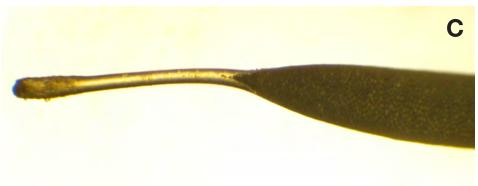
D. Moose base











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