

BIOscope

SPRING 2021

MESSAGE FROM THE DEPARTMENT CHAIR

As I write this, it was one year ago this week when the COVID-19 pandemic led to an extension of Spring Break and the abrupt transition to online course delivery. The good news is that we seem to be getting past the worst of the pandemic with a decline in cases and a rollout of vaccines that is gathering pace. We are cautiously optimistic that Fall 2021 will find us back to normal operations at the university. For us that means full labs, more classroom engagement, and opportunities to gather for events and activities once again. Although it is very likely that mask wearing will be required, classes are expected to be in-person at normal densities. This outlook depends in part on everyone getting the vaccine when eligible so please include that in your summer plans! If this experience has taught us anything, it is that adaptability and flexibility are essential skills and that our university community watches out for one another. I've been thoroughly impressed by the patience and resilience of students, and the commitment of faculty and staff to continue the delivery of quality learning experiences.

There is much to look forward to in the meantime as we wrap up the spring semester! Representing nearly one third of all submissions across the university, 15 Biology students have submitted abstracts for the virtual Student Research and Creative Endeavor Symposium

in March. Seven M.S. students are on track to defend their thesis and 28 students are preparing their final projects in Senior Seminar. Of course, graduation is on the horizon an event that I look forward to every year as we celebrate and recognize student success.

I will end by saluting Dr. Elliott Blumenthal on his retirement after 30+ years as a faculty member in Biology. Most recently Dr. B. served as department chair but he is probably best known for his dedication to student advising. His impact on the lives and careers of students certainly numbers in the hundreds, and there is probably not a health clinic in town where he wouldn't be recognized. Although I'm sure he doesn't miss the chair's office, he didn't manage to pull away entirely as he is teaching Immunobiology this spring while we hope to gear up to find a new recruit to fill that role and others. He has left big shoes to fill! Please scroll down or flip ahead to find more memories of Dr. B.

Continue to stay safe and healthy, and please reach out if there is anything we can help you with on your journey to graduation and beyond.

Mark Jordan, Ph.D.
Interim Chair of Biology



"Like" Biology on Facebook at facebook.com/Purdue-Fort-Wayne-Department-of-Biology-231430077377306/

CONGRATULATIONS TO OUR 2020 - 2021 GRADUATES

Bachelor of Science Fall 2020

Barton, Alexander P.
Butler, Kristen R.
Clarke, Carson E.
Clements, Jessica L.
Cooper, Kaitlyn A.
Gedio, Ishag A.
Hudson, Victoria R.
Kelsey, Michelle L.
Kirk, Julia E.
Murray, Bryan P.
Muyanja, Raymond F.
Ponce, Kristina N.
Rhoades, David M.
Sweet, Brooklyn N.

Bachelor of Science Spring 2021

Akbar, Abdul H.
Aung Win, Eaint H.
Aung, Nontae
Beckstedt, Madison E.
Burch, Rosemary G.

Chapman, Jonathan P.
Chen, Yan
Evans, Jadon M.
Ferguson, Jaima L.
Flores, Kimberly
Gawsyszawski, Rachel A.
Gilhespy, Joshua Z.
Gill, Emma C.
Grabau, Jared M.
Harless, Hannah K.
Hess, Hannah H.
Hindman, Haley N.
Islas, Mackenzie N.
Jensen, Deanne E.
Kaiser, Zachary T.
Kohne, Keiki L.
Le, Minh H.
McGee, Mitchell A.
Mendez, Cyntia E.
Nyariki, Cynthia K.
Shifflett, Alyssa N.
Smith, Devlin Z.
Volz, Avery M.

Master of Science Fall 2020

McGee, Gera'l'n

Master of Science Spring 2021

Carlson, Michael R.
Cornhill, Carlynn N.
Cubberley, Elizabeth A.
Dempsey, Connor
Dempsey, Kendra E.
Fracica, Kasey L.
Gutwein, Katelyn L.
Hathaway, Matthew R.
Kellogg, Zachary R.
Mason, Lindee T.
Meeth, Alison J.
Miller, Ariel L.
Mortuza, Asif
Newman, Shana L.
Ransbottom, Patrick J.
Shoemaker, Darren J.
St. Andrews, Laura

SCHOLARSHIPS / HONORS / AWARD WINNERS

Outstanding Biology Senior Award 2021

Aung Win, Eaint H. (Honey)

Honors in Biology, Spring 2021

Aung Win, Eaint H. (Honey)
(Mentor: Professor Emeritus
Elliott Blumenthal)

Teaching Assistants for Spring 2021:

Galen Burrell
Advisor: Assistant Professor
Scott Bergeson
Connor Dempsey
Advisor: Associate Professor
Mark Jordan
Eleanor Di Girolamo
Advisor: Assistant Professor

Scott Bergeson
Daniel Earl
Advisor: Professor Bruce
Kingsbury
Katelyn Gutwein
Advisor: Professor Bruce
Kingsbury
Matthew Hathaway
Advisor: Associate Professor
Jaiyanth Daniel
Zachary Kellogg
Advisor: Associate Professor
Mark Jordan
Ashley Kovach-Hammons
Advisor: Associate Professor
Jordan Marshall
Natalia Libreros-Marin
Advisor: Professor Frank
Paladino
Lindee Mason

Advisor: Professor Ahmed
Mustafa
Alison "Eley" Meeth
Advisor: Professor Frank
Paladino
Erica Morr
Advisor: Professor Emeritus
Elliott Blumenthal
Asif Mortuza
Advisor: Professor Ahmed
Mustafa
Sinthia Mumu
Advisor: Professor Ahmed
Mustafa
Ho Hoang "Anh" Nguyen
Advisor: Associate Professor
Tanya Soule
Kylie Schindler
Advisor: Associate Professor
Connie Kracher

SCHOLARSHIPS / HONORS / AWARD WINNERS (CONTINUED)

Research Assistants for 2020-2021

Elizabeth Cubberley
Advisor: Professor Bruce
Kingsbury
Nicholas Friedeman
Advisor: Associate Professor
Mark Jordan
Daniel Guinto
Advisor: Associate Professor
Mark Jordan
Sophie Mills
Advisor: Professor Frank
Paladino
Bria Spalding
Advisor: Professor Bruce

Kingsbury
Laura St. Andrews
Advisor: Professor Frank
Paladino

The following Biology students were recently awarded the Top 50 Award:

Malaika Ahmed- Biology BS
Michael Carlson- Biology MS
Jadon Evans-Biology, BS
Daniel Guinto-Biology, MS
Zachary Kaiser-Biology, BS
Phuong Nguyen-Biology, BS
Avery Volz-Biology, BS
Kimberly Flores-Biology, BS

Sophia Petrov-Biology, BS
Kyle Zurbuch-Biology, BS

Tri-Beta Inductees for 2021:

Yan Chen
Mauricio Cortes
Jaima Ferguson
Kimberly Flores
Ishag Gedio
Douglas Hutchinson
Phuong Nguyen
Timothy Messell
John Sarno
Alexandra Traciak

STUDENTS MOVING FORWARD

After successfully completing their programs with us, the following students have moved forward to different graduate and professional programs:

Alex Barton	Started job as Wildlife Technician in Idaho
Kaitlyn Cooper	Started job as Wildlife Technician in Idaho
Hannah Harless	Parkview Clinical Lab Sciences Program
Keiki Kohne	Parkview Clinical Lab Sciences Program
Asif Mortuza	Texas A&M University Ph.D. Program in Biology
Brooklyn Sweet	Georgia State University Master of Science Program
Eaint H. Aung Win	Purdue University Fort Wayne Graduate Program in Biology

COURSE ANNOUNCEMENTS

Fall 2021 – Biology Electives

A Electives

ENTM 20600 – General Applied Entomology
ENTM 20700 – General Applied Entomology Lab
BIOL 50200 – Conservation Biology
BIOL 55600 – Physiology I
BIOL 54210 – Biometry
BIOL 58301 – Environmental And Agricultural
Microbiology
BIOL 58302 – Laboratory in Environmental And
Agricultural Microbiology
FNR 50500 – Molecular Ecology & Evolution

B Electives

BIOL 38100 – Cell Biology
BIOL 38200 – Cell Biology Lab
BIOL 40600 – Human Anatomy
BIOL 43700 – General Microbiology
BIOL 53300 – Medical Microbiology
BIOL 51501 – Non-Medelian Genetics

STUDENT NEWS



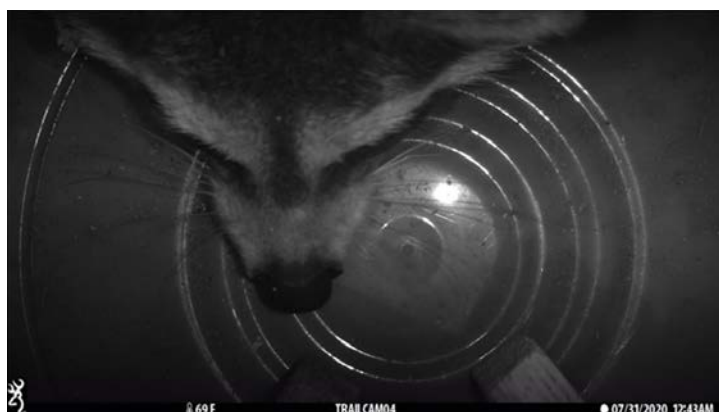
OUTSTANDING BIOLOGY STUDENT 2021 - Eaint Aung Win (Honey)

Due to the scholarship provided by the university, I was given a chance to study here in the United States. I came in as an international freshman from Myanmar with a limited background in biology. Nevertheless, I chose this major due to my curiosity in life sciences. I was nervous but determined. A lesson after each course, my passion for Biology increased even more. This is all due to the faculty members who helped me throughout my journey here. I cannot thank enough the Biology faculty for all the help and opportunities that were given me to flourish during my time in the department. I was given the opportunity to research under Dr. Elliott J. Blumenthal (Emeritus) since my sophomore year to investigate the Immunomodulatory and inhibitory effects of a nutraceutical on murine spleen and cancer cells respectively. With his patience and guidance throughout the years, I was able to develop myself and learn many new skillsets that will help

me throughout my career. I have the best professors here in the Biology department that motivates me to improve and will take time out of their day for the success of a student. Without the support from everyone in the department, I might not be who I am today and I might not have achieved what I have today. My family and I are very humbled and thankful for this honor as a senior biology student. I came to the university because of the people and the quality of education. I am staying and will be pursuing my master's degree here in the department because of the same reasons. I thank everyone for giving me the chance to share what I have learned from the department with other students as I attend my master. I also want to thank Dr. Elliot J. Blumenthal and Dr. Ahmed Mustafa for bringing me under their wings as a mentee as I continue my next chapter as a master student. I will always make sure I give my best in anything that comes my way. As long as my journey continues, I will always share whatever I have learned with others. I was inspired by many in the department and I hope my story inspires many to strive their best despite any obstacles.

BIOLOGY STUDENTS IN ACTION

Assistant Professor Bergeson and his research student Jessica Clements have been conducting research using wildlife trail cameras to survey small mammal populations at Eagle Marsh Nature Preserve (Photo: Scott Bergeson).



BIOLOGY STUDENTS IN ACTION (CONTINUED)

Assistant Professor Bergeson's Population Ecology Class (BIOL54300) visiting LC Nature Park for a field trip in February. While the students were cold, the elk and bison were just fine! The class will be conducting population research at the park in April (Photo: Scott Bergeson).



RECENT STUDENT PRESENTATIONS

The following biology students have presented their research at various conferences listed below:

Purdue University Fort Wayne Student Research and Creative Endeavor Symposium

Fort Wayne, March 26, 2021

Malaika Ahmed

(Mentor: Professor Ahmed Mustafa)

Katherine Brandewie

(Mentor: Associate Professor Mark Jordan)

Rosemary Burch

(Mentor: Professor Ahmed Mustafa)

Jessica Clements

(Mentor: Assistant Professor Scott Bergeson)

Connor Dempsey

(Mentor: Associate Professor Mark Jordan)

Samuel Dick

(Mentor: Visiting Assistant Professor Liliya Frolova, Chemistry faculty mentor)

Kimberly Flores

(Mentor: Associate Professor Elliott Blumenthal)

Nicholas Friedeman

(Mentor: Associate Professor Mark Jordan)

Daniel Guinto

(Mentor: Associate Professor Mark Jordan)

Matthew Hathaway

(Mentor: Associate Professor Jaiyanth Daniel)

Deanne Jensen

(Mentors: Assistant Professor Scott Bergeson and Professor Emeritus Robert Gillespie)

Graciela Jimenez

(Mentor: Associate Professor Tanya Soule)

Lindee Mason

(Mentor: Professor Ahmed Mustafa)

Asif Mortuza

(Mentor: Professor Ahmed Mustafa)

Sinthia Mumu

(Mentor: Professor Ahmed Mustafa)

Varun Shenoy

(Mentor: Associate Professor Jaiyanth Daniel)

Avery Volz

(Mentor: Visiting Assistant Professor Arturo Villalobos)

Eaint Honey Aung Win

(Mentor: Professor Ahmed Mustafa)

RECENT STUDENT PRESENTATIONS (CONTINUED)

**Southeastern Bat Diversity Network Meeting
and Annual Mammal Colloquium**
February 25, 2021

Galen Burrell

(Mentor: Assistant Professor Scott Bergeson)

Jessica Clements

(Mentor: Assistant Professor Scott Bergeson)

Deanne Jensen

(Mentor: Assistant Professor Scott Bergeson)

Indiana Chapter of The Wildlife Society
March 4, 2021

Galen Burrell

(Mentor: Assistant Professor Scott Bergeson)

FACULTY AND STAFF NEWS



RECENT PROGRESS OF ASSISTANT PROFESSOR REBECCA PALU

Assistant Professor Rebecca Palu has recently been invited to present her research titled, "Using the DGRP to identify modifiers of hyperglycemia in the absence of sir2" at the Annual Midwest Drosophila Conference, 2020. She has also submitted a manuscript (currently in revisions) with Nguyen, T. and Khalifa, A. as co-authors title, "Identifying genes related to Retinitis Pigmentosa in Drosophila Melanogaster using gene expression correlation". This work is the result of a collaboration with Dr. Amal Khalifa's Spring 2020 Bioinformatics at PFW. Dr. Palu has also submitted a collaborative project grant application (currently being evaluated) for her project on the identifying genetic modifiers of Fetal Alcohol Syndrome through gene expression analysis. This project is a new collaboration between Dr. Palu and Dr. Amal Khalifa (Computer Science) and Dr. Amy Perkins (Psychology).

FACULTY GRANTS

Assistant Professor Scott Bergeson's Wildlife Lab obtained a total of \$37,787 in external funding for its research on mink and bats from 2 funding organizations; including: Fox Island Alliance and the Indiana Department of Natural Resources.

Professor Ahmed Mustafa received a \$8,000 Senior Summer Research Grant and a \$3,800 Sabbatical Travel Grant to continue his research on the modulation of stress and immune response in vertebrate animals.

Professor Frank Paladino obtained a \$1,500 grant to investigate the demographics of juvenile sea turtles in Magdalena bay, Costa Rica from Fort Wayne Childrens Zoo Conservation; a \$30,000 Sonoma County Community Foundation Grant for sea turtle community conservation program in El Jobo, Costa Rica (awarded to The Leatherback Trust); a \$55,000 Goatee Foundation grant to investigate the population ecology of Leatherbacks and other sea turtles in Costa Rica; a \$3,000 Mary Margaret Stucky Foundation Grant for Sea Turtle Conservation; a \$25,000 Goldring Foundation Conservation Grant for the conservation monitoring program in PMLB, Costa Rica (awarded to the Leatherback Trust); and a \$25,000 Disney Conservation Foundation Grant for the conservation and education program to conserve sea turtles in Pacific Costa Rica (awarded to The Leatherback Trust).

RECENT BIOLOGY PUBLICATIONS

Bergeson, S. M., Confortin, K. A., Carter, T. C., Karsk, J. R., Haulton, S. and Burnett, H. Northern long-eared bats roosting in a managed forest in south-central Indiana. *Forest Ecology and Management*, Vol 483, 1 March 2021. <https://doi.org/10.1016/j.foreco.2021.118928>

Burch, R., Mortuza, A., Blumenthal, E., and Mustafa, A. Effects of cannabidiol (CBD) on the inhibition of melanoma cells in vitro. *Journal of Immunoassay and Immunochemistry*, January 2021. <https://doi.org/10.1080/15321819.2020.1862863>.

Biswas, A., Mason, L., Mortuza, A., Blumenthal, E. and Mustafa, A. Stimulatory effect of Holy basil and Thai basil on mouse spleen cell proliferation. *Journal of Immunoassay and Immunochemistry*, December 2020. <https://doi.org/10.1080/15321819.2020.1862864>.

Clyde-Brockway, C., Robinson, N. J., Blanco, G. S., Morreale, S. J., Spotila, J. R., Santidria´ N Tomillo, P., and Paladino, F. V. Local Variation in the Internesting Behavior of Green Turtles in the Gulf of Papagayo, Costa Rica. *Chelonian Conservation and Biology*, 18(2), 2020. doi:10.2744/CCB-1352.1

Marshall, J. M. "Spotted Knapweed Spread and Plant Community Changes in a Lacustrine Dune System," *Natural Areas Journal*, 41(1), 11-17, January 2021. <https://doi.org/10.3375/043.041.0103>

Santidrián-Tomillo, P., Fonseca, L. G., Ward, M., Tankersley, N., Robinson, N. J., Orrego, C. M., Paladino, F. V. and Saba, V. S. The impacts of extreme El Niño events on sea turtle nesting populations. *Climatic Change*, 2020. <https://doi.org/10.1007/s10584-020-02658-w>

Silver-Gorges, I., Koval, J., Rodriguez-Zarate, C. J., Paladino, F. V., and Jordan, M. Large-scale connectivity, cryptic population structure, and relatedness in Eastern Pacific Olive ridley sea turtles (*Lepidochelys olivacea*). *Ecology and Evolution*, 2020.

Swinehart, A. L. and Farlow, J. O. Plant and invertebrate macrofossils from the Pipe Creek Sinkhole (Late Neogene), Grant County, Indiana. *Historical Biology*; published on-line ahead of print, December 2020. <https://doi.org/10.1080/08912963.2020.1851686>

Veelenturf, C. A., Sinclair, E. M., Paladino, F. V., and Honarvar, S. Predicting the impacts of sea level rise in sea turtle nesting habitat on Bioko Island, Equatorial Guinea. *PLoS ONE* 15(7):e0222251, 2020. <https://doi.org/10.1371/journal.pone.0222251>

Vindas-Picado, J., Yaney-Keller, A., St. Andrews, L., Panagopoulou, A. Paladino, F. V. and Santidrián Tomillo, P. Effectiveness of shading to mitigate the impact of high temperature on sea turtle clutches considering the effect on primary sex ratios. *Mitigation and Adaptation Strategies for Global Change*, 2020. <https://doi.org/10.1007/s11027-020-09932-3>

ERC NEWS

A goal of the Environmental Resources Center (ERC) is to enhance student opportunities relating to sustainability and the environment. To that end, the ERC has a student internship program. A part of that is supported by the Waterfield Sustainability Internship Endowment, while others are project specific. These are great experiences for the interns, and the ERC benefits by having a larger team working on a broader array of activities, and enrichment from new perspectives.

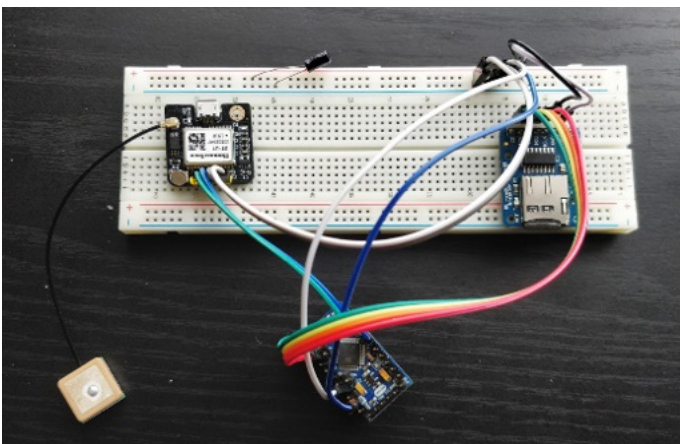


Deanne Jensen joined ERC as their first Waterfield Sustainability Intern. Dee is a Biology student with a background in macroinvertebrate research and engagement with local conservation organizations. As the Waterfield Sustainability Intern, she has been developing water related planning and programming, while also strengthening connections with Fort Wayne water conservation organizations.

Jenna Lehman joined ERC to work on social media strategy. She is working towards a degree in Marketing and came to us with skills in videography, social media, and marketing approaches. She has been

helping us to develop virtual programming and a marketing plan which will be an element of our overall strategic plan.

Chase Lose, a graduating senior in Computer Science with expertise in WordPress, joined ERC to help code ERC web site to make it more interactive and to support the virtual programming Jenna has been assisting with.



Naim Miah, a graduate student in Electrical Engineering, is working with ERC to develop small GPS (Global Positioning System) units. They will be attached to female turtles in an effort to explore nesting movements and improve conservation approaches. The circuit board shown here is part of the GPS development process. It is also a fine analogy for what we are after with our interns, combining their skills, knowledge, and unique perspectives to the ERC team to give them real world experiences and get more done!

(Photo credit: Samantha Theisen)

EDITORIAL

A tribute to Professor Emeritus Elliott Blumenthal

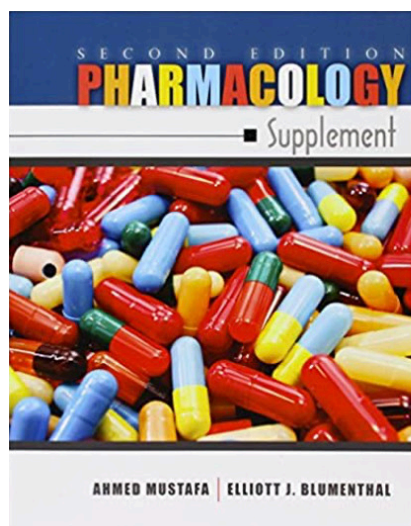
We are dedicating this issue to Professor Elliott Blumenthal, who has recently retired. Dr. Blumenthal has worked at Purdue University Fort Wayne (and former Indiana University Purdue University Fort Wayne) for 31 years.

As a teacher, Dr. Blumenthal has contributed to departmental offerings at all levels. He has taught Immunobiology, Cancer Biology, and Biology of Aging as special courses to our students. Through enthusiastic presentation, clear delivery, and an awareness of the ways in which student attention spans and class interactions function, he has helped students develop curiosity and desire for learning. Beside teaching, Dr. Blumenthal has created a novel research niche for students and has provided research opportunities to many students. As a researcher, he has been interested in understanding how the immune system becomes altered with age. In addition to studying age-related alterations in immune system function, he has also examined how environmental toxins affect immune function in rats, mice and fish, as well as examined signal transduction alterations in other organs, such as liver. Dr. Blumenthal has also been active in service to the community, the university, and our students. Dr. Blumenthal has actively encouraged students to become involved in scientific research. He has taught students to become effective independent thinkers, many of whom have successfully presented their findings at regional, national, and international scientific meetings, and received co-authorships in peer-reviewed publications. Several of these students have successfully transitioned to graduate schools pursuing doctoral and other professional degrees.

Dr. Blumenthal has been well liked by all his colleagues, staff and students. He will be greatly missed. We wish him all the best.

Ahmed Mustafa
Editor, Bioscope

Following are some photographs of Dr. Blumenthal and his productions, taken during his tenure at Purdue University Fort Wayne:



Journal of Immunoassay and Immunochemistry



ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/ljii20>

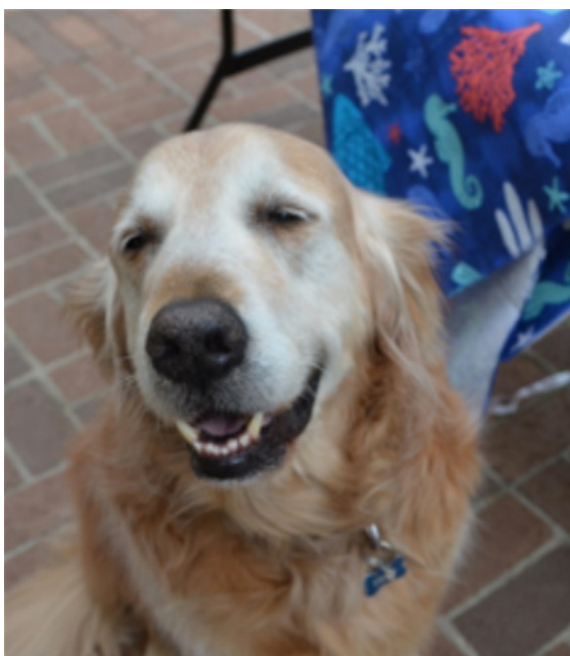
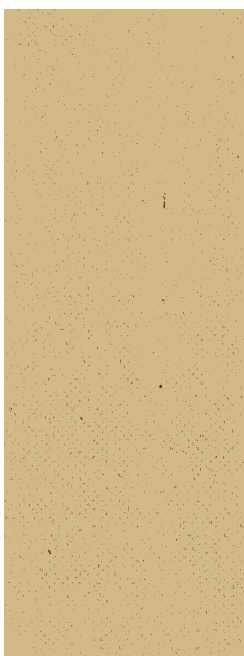
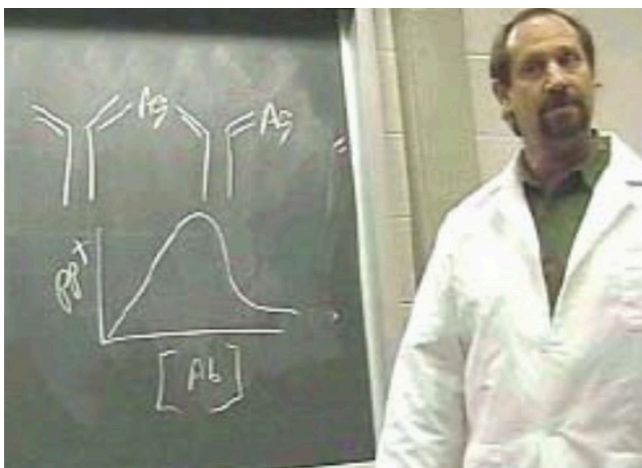
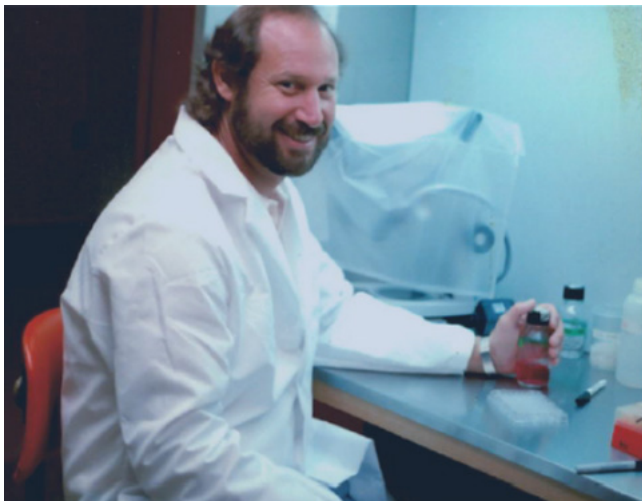
Effects of cannabidiol (CBD) on the inhibition of melanoma cells *in vitro*

Rosemary Burch, Asif Mortuza, Elliott Blumenthal & Ahmed Mustafa

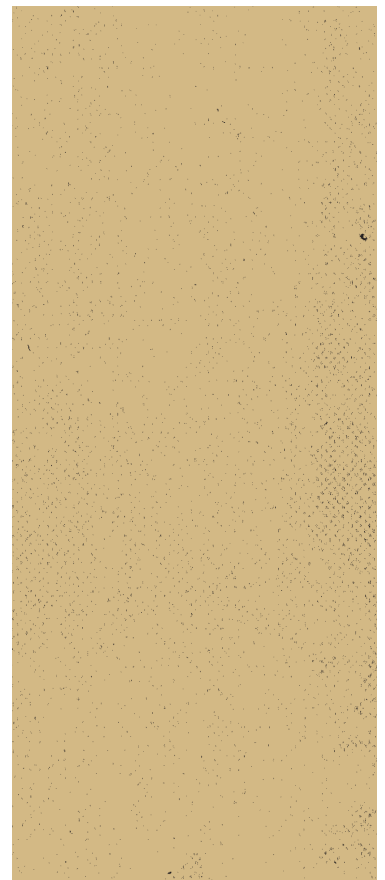
To cite this article: Rosemary Burch, Asif Mortuza, Elliott Blumenthal & Ahmed Mustafa (2021): Effects of cannabidiol (CBD) on the inhibition of melanoma cells *in vitro*, Journal of Immunoassay and Immunochemistry

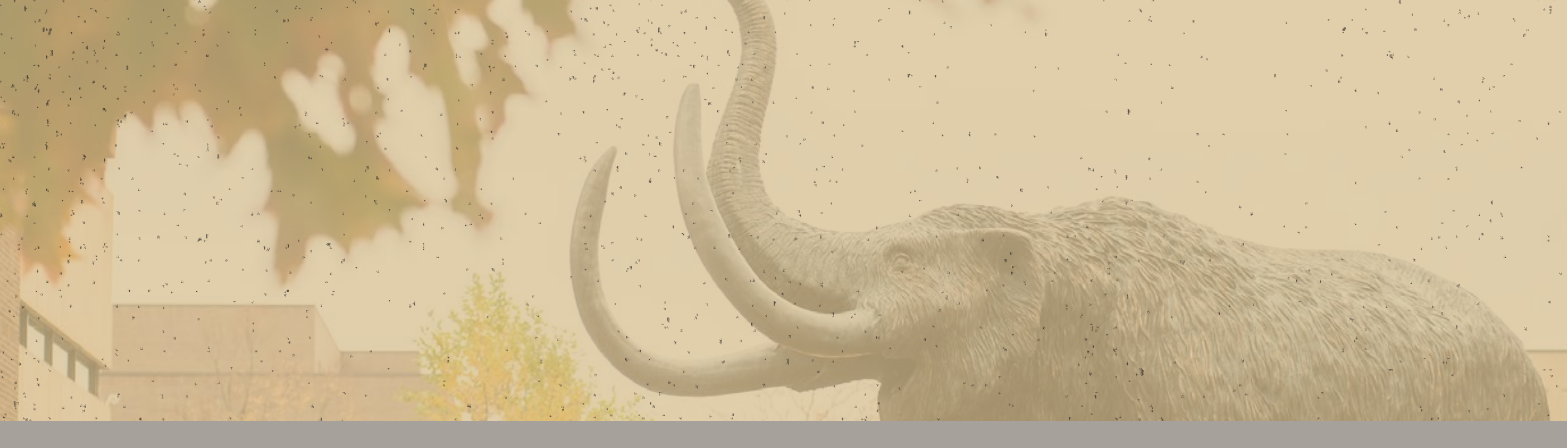
To link to this article: <https://doi.org/10.1080/15321819.2020.1862863>

EDITORIAL (CONTINUED)



EDITORIAL (CONTINUED)





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Department of Biology

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