



University of Iowa Health Care

*Office of Graduate  
and Postdoctoral Studies*

# SUMMER UNDERGRADUATE POSTER SYMPOSIUM

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Wednesday, July 28, 2021

1:30 – 3:00 p.m. Even Numbered Posters Present

3:00 – 4:30 p.m. Odd Numbered Posters Present

Jean E. and Renée P. Robillard Atrium

Medical Education Research Facility

[www.medicine.uiowa.edu/biomedgradpostdoc](http://www.medicine.uiowa.edu/biomedgradpostdoc)

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# Presenters by Poster Number

Even Numbered Posters Present 1:30 - 3:00 PM | Odd Numbered Posters Present 3:00 - 4:30PM

1	Emma Aanestad	33	Sam Reyes	66	Ruby Sanchez
2	Shiva Bucklin	34	Kartik Sivakumar	67	Austin Xiong
2	Koffi Amegble	35	Jason Schwarzhoff	68	Allison Frahm
3	Sydney Bernhard	36	Nicole Boodhoo	69	Josie Bliss
4	Bailey McElligott	37	Jenna Smuszkiewicz	70	Emily Kalmanek
5	Hunter Brown	38	Hannah McCumber	71	Amanda Caraballo
6	Gretchen Stennett	39	Matthew Summerfield	72	Oloigbe Ofori
7	Baylee Bruce	40	Shalini Birari	73	Floyd Evans, Jr.
8	Rakshya Thapa	41	Melanie Ayala Ceja	74	Nolan Burson
9	Dalton Dencklau	42	Julian Bonilla	75	Camila Sofia Gomez
10	D. Throckmorton	43	Andrea Benavides	76	Megan Conrad
11	Eric Doorn	44	Wesley Hanson	77	Bryan Guevara
12	A. Agyemang-Duah	45	William C. Cho	78	Abigail Davison
13	Julia Duvall	46	Jade Hays	79	Felipe Herrmann
14	Cass Kennemur	47	Zach Elias	80	Nicholas Dorricott
15	Emma Grunkemeyer	48	Francois LeSage	81	Emily Herum
16	Claire Loos	49	Gabriel Gaudencio	82	Thomas Duong
17	Lauren Haertjens	50	Andres Orea	83	Odysseus Orr
18	Jalissa Pirro	51	Andreas Kantartzis	84	Samuel Eliassen
19	Spenser Johnson	52	Zulymar Ramos	85	Cade Rahlf
20	Max Robinson	53	Gabriella Lott	86	Joshua Peterson
21	Kayla Keckler	54	Emma Thames	87	Cally Tucker
22	Ed Ryon	55	Jacqueline Mehr	88	Isabella Holland
23	Martin-Junior Ketcha	56	Facundo Torres	89	Anthony Vitale
24	Angelina Santamaria	57	Shrey Patel	90	Ashleigh Jacobs
25	Naomi Meurice	58	My Tran	91	Grace Kollman
26	Madeline Wary	59	Open	92	Anna Ramsey
27	Claire Olson	60	Meghan Cantu	93	Younes Rouabhi
28	Daniel Fu	61	Prateek Raikwar	94	Jayden Shin
29	Kayla Olstinske	62	DJ Guillory	95	Hala Soliman
30	Cessily Hayes	63	Jovan T. Vaquerano	96	Joseph Tutt
31	Anna Rediger	64	Quinn Mattison	97	Grace Williamson
32	Arshaq Saleem	65	Elyse Vetter	98	XINNUO ZHAO

# Presenters by Summer Research Program

Even Numbered Posters Present 1:30 - 3:00 PM | Odd Numbered Posters Present 3:00 - 4:30PM

## Biomedical Scholars Summer

### Undergraduate Research Program

Aanestad, Emma	1
Bernhard, Sydney	3
Brown, Hunter	5
Bruce, Baylee	7
Dencklau, Dalton	9
Doorn, Eric	11
Duvall, Julia	13
Grunkemeyer, Emma	15
Haertjens, Lauren	17
Johnson, Spenser	19
Keckler, Kayla	21
Ketcha, Martin-Junior	23
Meurice, Naomi	25
Olson, Claire	27
Olstinske, Kayla	29
Rediger, Anna	31
Reyes, Sam	33
Schwarzhoff, Jason	35
Smuszkiewicz, Jenna	37
Summerfield, Matthew	39

### FUTURE in Biomedicine

Bucklin, Shiva	2
Amegble, Koffi	2
McElligott, Bailey	4
Stennett, Gretchen	6
Thapa, Rakshya	8
Throckmorton, Delaney	10

### I-GAWS REU

Agyemang-Duah, A.	12
Kennemur, Cass	14
Loos, Claire	16
Pirro, Jalissa	18
Robinson, Max	20
Ryon, Ed	22
Santamaria, Angelina	24
Wary, Madeline	26

## Individual Arrangement

Burson, Nolan	74
Conrad, Megan	76
Davison, Abigail	78
Dorricott, Nicholas	80
Duong, Thomas	82
Eliassen, Samuel	84
Holland, Isabella	88
Jacobs, Ashleigh	90
Kollman, Grace	91
Ramsey, Anna	92
Rouabhi, Younes	93
Shin, Jayden	94
Soliman, Hala	95
Tutt, Joseph	96
Williamson, Grace	97
ZHAO, XINNUO	98

## Iowa Biosciences Academy

Bliss, Josie	69
Carballo, Amanda	71
Evans, Jr., Floyd	73
Gomez, Camila Sofia	75
Guevara, Bryan	77
Herrmann, Felipe	79
Herum, Emily	81
Orr, Odysseus	83
Peterson, Joshua	86
Rahlf, Cade	85
Tucker, Cally	87
Vitale, Anthony	89

## Iowa Neuroscience Institute

### Summer Scholars

Fu, Daniel	28
Hayes, Cessily	30
Saleem, Arshaq	32
Sivakumar, Kartik	34

### Louis Stokes Alliance for Minority Participation

Cantu, Meghan	60
Guillory, DJ	62
Mattison, Quinn	64
Sanchez, Ruby	66

## Premed Student Summer

### Research Internship

Frahm, Allison	68
Kalmanek, Emily	70
Ofori, Oloigbe	72

### Science Alliance (UI)

Boodhoo, Nicole	36
McCumber, Hannah	38

### Summer Microbiology

### Research Experience for Undergraduates (REU)

#### Program

Birari, Shalini	40
Bonilla, Julian	42
Hanson, Wesley	44
Hays, Jade	46
LeSage, Francois	48
Orea, Andres	50
Ramos, Zulymar	52
Thames, Emma	54
Torres, Facundo	56
Tran, My	58

### Summer Undergraduate MSTP

#### Research Program

Ayala Ceja, Melanie	41
Benavides, Andrea	43
Cho, William C.	45
Elias, Zach	47
Gaudencio, Gabriel	49
Kantartzis, Andreas	51
Lott, Gabriella	53
Mehr, Jacqueline	55
Patel, Shrey	57
Raikwar, Prateek	61
Tormes Vaquerano, J.	63
Vetter, Elyse	65
Xiong, Austin	67

# Presenters in Alphabetical Order

Even Numbered Posters Present 1:30 - 3:00 PM | Odd Numbered Posters Present 3:00 - 4:30PM

Aanestad, Emma	1	Kantartzis, Andreas	51	Torres, Facundo	56
Agyemang-Duah, A.	12	Keckler, Kayla	21	Tran, My	58
Amegble, Koffi	2	Kennemur, Cass	14	Tucker, Cally	87
Ayala Ceja, Melanie	41	Ketcha, Martin-Junior	23	Tutt, Joseph	96
Benavides, Andrea	43	Kollman, Grace	91	Vetter, Elyse	65
Bernhard, Sydney	3	LeSage, Francois	48	Vitale, Anthony	89
Birari, Shalini	40	Loos, Claire	16	Wary, Madeline	26
Bliss, Josie	69	Lott, Gabriella	53	Williamson, Grace	97
Bonilla, Julian	42	Mattison, Quinn	64	Xiong, Austin	67
Boodhoo, Nicole	36	McCumber, Hannah	38	ZHAO, XINNUO	98
Brown, Hunter	5	McElligott, Bailey	4		
Bruce, Baylee	7	Mehr, Jacqueline	55		
Bucklin, Shiva	2	Meurice, Naomi	25		
Burson, Nolan	74	Ofori, Oloigbe	72		
Cantu, Meghan	60	Olson, Claire	27		
Caraballo, Amanda	71	Olstinske, Kayla	29		
Cho, William C.	45	Orea, Andres	50		
Conrad, Megan	76	Orr, Odysseus	83		
Davison, Abigail	78	Patel, Shrey	57		
Dencklau, Dalton	9	Peterson, Joshua	86		
Doorn, Eric	11	Pirro, Jalissa	18		
Dorricott, Nicholas	80	Rahlf, Cade	85		
Duong, Thomas	82	Raikwar, Prateek	61		
Duvall, Julia	13	Ramos, Zulymar	52		
Elias, Zach	47	Ramsey, Anna	92		
Eliassen, Samuel	84	Rediger, Anna	31		
Evans, Jr., Floyd	73	Reyes, Sam	33		
Frahm, Allison	68	Robinson, Max	20		
Fu, Daniel	28	Rouabhi, Younes	93		
Gaudencio, Gabriel	49	Ryon, Ed	22		
Gomez, Camila Sofia	75	Saleem, Arshaq	32		
Grunkemeyer, E.	15	Sanchez, Ruby	66		
Guevara, Bryan	77	Santamaria, Angelina	24		
Guillory, DJ	62	Schwarzhoff, Jason	35		
Haertjens, Lauren	17	Shin, Jayden	94		
Hanson, Wesley	44	Sivakumar, Kartik	34		
Hayes, Cessily	30	Smuszkiewicz, Jenna	37		
Hays, Jade	46	Soliman, Hala	95		
Herrmann, Felipe	79	Stennett, Gretchen	6		
Herum, Emily	81	Summerfield, M.	39		
Holland, Isabella	88	Thames, Emma	54		
Jacobs, Ashleigh	90	Thapa, Rakshya	8		
Johnson, Spenser	19	Throckmorton, D.	10		
Kalmanek, Emily	70	Tormes Vaquerano, J.	63		

# Presenters by Mentor

Even Numbered Posters Present 1:30 - 3:00 PM | Odd Numbered Posters Present 3:00 - 4:30PM

## **Bryan Allen, MD, PhD**

Reyes, Sam 33

## **Ryan Boudreau, PhD**

Rediger, Anna 31

Schwarzhoff, Jason 35

## **Gordon Buchanan, MD, PhD**

Boodhoo, Nicole 36

Summerfield, Matthew 39

## **Robert Cornell, PhD**

Throckmorton, Delaney 10

Olson, Claire 27

## **Marcelo Correia, MD, PhD**

Ofori, Oloigbe 72

Peterson, Joshua 86

Tucker, Cally 87

## **Dao-Fu Dai, MD, PhD**

Guevara, Bryan 77

## **Brandon Davies, PhD**

Thapa, Rakshya 8

## **Kris DeMali, PhD**

Lott, Gabriella 53

## **Daniel Eberl, PhD**

Brown, Hunter 5

Holland, Isabella 88

Jacobs, Ashleigh 90

## **Angelena Edwards, MD**

Kalmanek, Emily 70

## **Craig Ellermeier, PhD**

Torres, Facundo 56

## **John Engelhardt, PhD**

McCumber, Hannah 38

## **Jan Fassler, PhD**

Bruce, Baylee 7

Grunkemeyer, Emma 15

## **Melissa Fath, PhD**

Johnson, Spenser 19

## **Jennifer Fiegel, PhD**

Guillory, DJ 62

Burson, Nolan 74

Williamson, Grace 97

## **Rory Fisher, PhD**

Fu, Daniel 28

## **Andrew Frank, PhD**

Smuszkiewicz, Jenna 37

## **Isabella Grumbach, MD, PhD**

Vitale, Anthony 89

## **Prajwal Gurung, PhD**

Duvall, Julia 13

## **Marco Hefti, MD**

Raikwar, Prateek 61

## **Jon Houtman, PhD**

LeSage, Francois 48

## **Bradley Jones, PhD**

Thames, Emma 54

## **Emily Kroska, PhD**

Cantu, Meghan 60

Herrmann, Felipe 79

## **Adam Mailloux, PhD**

Bonilla, Julian 42

## **Ashutosh Mangalam, PhD**

Dencklau, Dalton 9

Ayala Ceja, Melanie 41

## **Thorsten Maretzky, PhD**

Kantartzis, Andreas 51

## **Wendy Maury, PhD**

Hanson, Wesley 44

## **Jeff Murray, MD**

Evans, Jr., Floyd 73

## **N. Narayanan, MD, PhD**

Sivakumar, Kartik 34

Elias, Zach 47

Gaudencio, Gabriel 49

## **Maurine Neiman, PhD**

Sanchez, Ruby 66

Bliss, Josie 69

## **Brian O'Neill, MD, PhD**

Patel, Shrey 57

## **Christine Petersen, DVM, PhD**

Keckler, Kayla 21

## **Rob Piper, PhD**

Stennett, Gretchen 6

## **Miles Pufall, PhD**

Bernhard, Sydney 3

## **Jason Radley, PhD**

Eliassen, Samuel 84

## **Kamal Rahmouni, PhD**

Rouabhi, Younes 93

## **Richard Roller, PhD**

Tran, My 58

## **Andrew Russo, PhD**

Ketcha, Martin-Junior 23

Cho, William C. 45

Conrad, Megan 76

Davison, Abigail 78

Dorricott, Nicholas 80

Duong, Thomas 82

Tutt, Joseph 96

## Presenters by Mentor

Even Numbered Posters Present 1:30 - 3:00 PM | Odd Numbered Posters Present 3:00 - 4:30PM

### **Aliasger Salem, PhD**

Shin, Jayden 94

### **Heather Sander, PhD**

Caraballo, Amanda 71

### **Patrick Schlievert, PhD**

Benavides, Andrea 43

### **Michael Schultz, PhD**

Doorn, Eric 11

### **Scott Shaw, PhD**

Soliman, Hala 95

### **Madeline Shea, PhD**

Herum, Emily 81

Rahlf, Cade 85

### **Adam Skibbe, PhD**

Agyemang-Duah, A. 12

Kennemur, Cass 14

Loos, Claire 16

Pirro, Jalissa 18

Robinson, Max 20

Ryon, Ed 22

Santamaria, Angelina 24

Wary, Madeline 26

### **Diane Slusarski, PhD**

Gomez, Camila Sofia 75

### **Maria Spies, PhD**

McElligott, Bailey 4

### **Douglas Spitz, PhD**

Bucklin, Shiva 2

Amegble, Koffi 2

### **Hanna Stevens, MD, PhD**

Meurice, Naomi 25

Vetter, Elyse 65

### **Colleen Stockdale, MD**

Frahm, Allison 68

### **Stefan Strack, PhD**

Kollman, Grace 91

### **Munir Tanas, MD**

Haertjens, Lauren 17

### **Eric Taylor, PhD**

Tormes Vaquerano, J. 63

### **Tina Tootle, PhD**

Ramsey, Anna 92

### **Daniel Tranel, PhD**

Aanestad, Emma 1

### **Michelle Voss, PhD**

Saleem, Arshaq 32

### **Lori Wallrath, PhD**

Xiong, Austin 67

### **Edward Wasserman, PhD**

Orr, Odysseus 83

### **Daniel Weeks, PhD**

Mattison, Quinn 64

### **David Weiss, PhD**

Hays, Jade 46

Orea, Andres 50

### **Aislinn Williams, MD, PhD**

Hayes, Cessily 30

Mehr, Jacqueline 55

### **Mary Wilson, MD**

Birari, Shalini 40

### **Li Wu, PhD**

Ramos, Zulymar 52

ZHAO, XINNUO 98

### **Shujie Yang, PhD**

Olstinske, Kayla 29

**1**

**Clinical Utility of the NIHTB-CB in Young Individuals with Epilepsy**

Emma Aanestad, St. Olaf College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Daniel Tranel, PhD, Professor, Psychological and Brain Sciences

**2**

**Pharmacological inhibition of SIRT1 and SIRT2 with Sirtinol induces oxidative stress and sensitizes NSCLC cells to cell death with pharmacological ascorbate**

Shiva Bucklin, Grinnell College

FUTURE in Biomedicine

Mentor: Douglas Spitz, PhD, Professor, Radiation Oncology

**2**

**Pharmacological inhibition of SIRT1 and SIRT2 with Sirtinol induces oxidative stress and sensitizes NSCLC cells to cell death with pharmacological ascorbate**

Koffi Amegble, Grinnell College

FUTURE in Biomedicine

Mentor: Douglas Spitz, PhD, Professor, Radiation Oncology

**3**

**Effects of PI3K $\delta$  on glucocorticoid sensitivity in high-risk models of B-cell Acute Lymphoblastic Leukemia**

Sydney Bernhard, Augustana University

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Miles Pufall, PhD, Professor, Biochemistry

**4**

**Biochemical and single-molecule investigation of the GFP-tagged Rad51 recombinase**

Bailey McElligott, Grinnell College

FUTURE in Biomedicine

Mentor: Maria Spies, PhD, Professor, Biochemistry

**5**

**The function of innate immune pathway and oxidative stress in acoustic trauma.**

Hunter Brown, University of Iowa

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Daniel Eberl, PhD, Professor, Biology

**6**

**Molecular Insights into an Inherited Neurological Disorder**

Gretchen Stennett, Dordt University

FUTURE in Biomedicine

Mentor: Rob Piper, PhD, Professor, Molecular Physiology and Biophysics



**7**

**Putative Adhesion Molecules from an Emerging Fungal Pathogen**

Baylee Bruce, St. Ambrose University  
Biomedical Scholars Summer Undergraduate Research Program  
Mentor: Jan Fassler, PhD, Professor, Biology

**8**

**DISSECTING THE LIPASE INHIBITORY FUNCTIONS OF ANGPTL3 BY SITE- DIRECTED MUTAGENESIS**

Rakshya Thapa, Waldorf University  
FUTURE in Biomedicine  
Mentor: Brandon Davies, PhD, Associate Professor, Biochemistry

**9**

**The effects of dietary isoflavones on estrogen receptor expression in C57BL6 mice.**

Dalton Dencklau, Grand View University  
Biomedical Scholars Summer Undergraduate Research Program  
Mentor: Ashutosh Mangalam, PhD, Associate Professor, Pathology

**10**

**The genomic basis of evolutionary novelty: How was TFAP2 expression recruited to the neural plate border?**

Delaney Throckmorton, Coe College  
FUTURE in Biomedicine  
Mentor: Robert Cornell, PhD, Professor, Anatomy and Cell Biology

**11**

**Reducing Renal Radioactivity Using Cleavable Linkers**

Eric Doorn, Calvin University  
Biomedical Scholars Summer Undergraduate Research Program  
Mentor: Michael Schultz, PhD, Associate Professor, Radiology

**12**

**Agyemang-Duah - Poster Placeholder**

Amma Agyemang-Duah, College of William and Mary  
I-GAWS REU  
Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**13**

**Lipopolysaccharide Exposure in Mice shows Biological Sex Differences in Immune Responses**

Julia Duvall, Bowdoin College  
Biomedical Scholars Summer Undergraduate Research Program  
Mentor: Prajwal Gurung, PhD, Assistant Professor, Internal Medicine

**14**

**Kennemur Poster Placeholder**

Cass Kennemur, Colorado College  
I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**15**

**Identification of Genes Affecting Fermentation in *S. cerevisiae***

Emma Grunkemeyer, University of Iowa  
Biomedical Scholars Summer Undergraduate Research Program

Mentor: Jan Fassler, PhD, Professor, Biology

**16**

**Claire Loos Poster Placeholder**

Claire Loos, Skidmore College  
I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**17**

**Digesting the role of ZZZ3 in TAZ-CAMTA1-mediated cell transformation**

Lauren Haertjens, Wartburg College  
Biomedical Scholars Summer Undergraduate Research Program

Mentor: Munir Tanas, MD, Associate Professor, Pathology

**18**

**Pirro Poster Placeholder**

Jalissa Pirro, SUNY Binghamton  
I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**19**

**Combination of Superoxide Dismutase Mimetics Enhances Pharmacological Ascorbate Efficacy in Non-Small Cell Lung Cancer**

Spenser Johnson, University of Iowa  
Biomedical Scholars Summer Undergraduate Research Program

Mentor: Melissa Fath, PhD, Assistant Professor, Radiation Oncology

**20**

**Max Robinson Poster Placeholder**

Max Robinson, University of North Carolina at Pembroke  
I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**21**

**Impact of *Borrelia burgdorferi* co-infection on Type I Interferon gene induction by *Leishmania infantum*-infected canine macrophages.**

Kayla Keckler, Grand Valley State University

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Christine Petersen, DVM, PhD, PhD, Professor, Epidemiology

**22**

**Ed Ryon Poster Placeholder**

Ed Ryon, Cal Poly

I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**23**

**Validation of an automated squint assay for a general pain model in mice**

Martin-Junior Ketcha, Grinnell College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Andrew Russo, PhD, Professor, Molecular Physiology and Biophysics

**24**

**Santamaria Poster Placeholder**

Angelina Santamaria, Penn St. University

I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**25**

**Measuring what role offspring sex plays in how permethrin and cypermethrin exposure in utero affects body weight and brain angiogenesis**

Naomi Meurice, Pomona College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Hanna Stevens, MD, PhD, Associate Professor, Psychiatry

**26**

**Maddy Wary Poster Placeholder**

Madeline Wary, University of Rochester

I-GAWS REU

Mentor: Adam Skibbe, PhD, Professor, Geographical and Sustainability Sciences

**27**

**Investigating candidate human orofacial clefting genes using zebrafish as a model**

Claire Olson, Davidson College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Robert Cornell, PhD, Professor, Anatomy and Cell Biology

**28**

**RGS6-mediated Neurogenesis in an Alzheimer's Disease Mouse Model**

Daniel Fu, University of Iowa

Iowa Neuroscience Institute Summer Scholars

Mentor: Rory Fisher, PhD, Professor, Neuroscience and Pharmacology

**29**

**Screening and Validation of FDA Approved Oncology Drugs for Induction of Progesterone Receptor Expression in Endometrial Cancer Cells**

Kayla Olstinske, Drake University

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Shujie Yang, PhD, Assistant Professor, Pathology

**30**

**Measuring Spontaneous Activity of Cerebellar Granule Neurons**

Cessily Hayes, University of Iowa

Iowa Neuroscience Institute Summer Scholars

Mentor: Aislinn Williams, MD, PhD, Assistant Professor, Psychiatry

**31**

**Study of cortexin-domain containing microproteins in relation to amyloid precursor protein processing and Alzheimer's disease**

Anna Rediger, Dordt University

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Ryan Boudreau, PhD, Associate Professor, Internal Medicine

**32**

**A role for the cerebellar vermis in Bipolar Disorder? A functional connectivity-based analysis**

Arshaq Saleem, University of Iowa

Iowa Neuroscience Institute Summer Scholars

Mentor: Michelle Voss, PhD, Associate Professor, Psychological and Brain Sciences

**33**

**Accelerating Wound Healing Whilst Sensitizing Sarcomas to Radiation: the Dual Role of Pharmacological Ascorbate and the SOD Mimetic GC4419**

Sam Reyes, Wartburg College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Bryan Allen, MD, PhD, Associate Professor, Radiation Oncology

**34**

**Role of mesocortical and nigrostriatal dopamine during temporal control of action**

Kartik Sivakumar, University of Iowa

Iowa Neuroscience Institute Summer Scholars

Mentor: Nandakumar Narayanan, MD, PhD, Associate Professor, Neurology

**35**

**Optimizing a One-Step CUT&RUN Approach for GFP-Tagged Proteins**

Jason Schwarzhoff, University of Iowa

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Ryan Boudreau, PhD, Assistant Professor, Internal Medicine

**36**

**The role of the 5-HT<sub>2C</sub> receptor on breathing and mortality following an induced seizure in amygdala kindled animals**

Nicole Boodhoo, University of Iowa

Science Alliance (UI)

Mentor: Gordon Buchanan, MD, PhD, Associate Professor, Neurology

**37**

**Calcineurin inhibitor effects on synapse development and behavior in Drosophila**

Jenna Smuszkievicz, Wartburg College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Andrew Frank, PhD, Professor, Anatomy and Cell Biology

**38**

**MALDI And Cystic Fibrosis**

Hannah McCumber, University of Iowa

Science Alliance (UI)

Mentor: John Engelhardt, PhD, Professor, Anatomy and Cell Biology

**39**

**Seizure susceptibility and post-ictal breathing in a mouse model of frontotemporal dementia**

Matthew Summerfield, Hope College

Biomedical Scholars Summer Undergraduate Research Program

Mentor: Gordon Buchanan, MD, PhD, Associate Professor, Neurology

**40**

**Tracking the dissemination of Leishmania Infantum in mice**

Shalini Birari, University of Iowa

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Mary Wilson, MD, Professor, Microbiology and Immunology

**41**

**Role of interleukin 17A and interleukin 17A/F in regulating experimental autoimmune encephalomyelitis in animal model of multiple sclerosis**

Melanie Ayala Ceja, University of California, Los Angeles

Summer Undergraduate MSTP Research Program

Mentor: Ashutosh Mangalam, PhD, Associate Professor, Pathology

**42**

**Hypoxia Prevents the Induction of the Immunoproteasome Subunits in Murine Melanoma**

Julian Bonilla, Macalester College

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Adam Mailloux, PhD, Assistant Professor, Microbiology and Immunology

**43**

**Molecular and Cellular Biology of Human Vaginal Pathogens**

Andrea Benavides, St. Mary's University

Summer Undergraduate MSTP Research Program

Mentor: Patrick Schlievert, PhD, Professor, Microbiology and Immunology

**44**

**Identification of Novel Ebolavirus Receptors in Human Keratinocytes**

Wesley Hanson, University of Iowa

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Wendy Maury, PhD, Professor, Microbiology and Immunology

**45**

**Meningeal Macrophages in Mouse Model of Migraine**

William Christopher Cho, Vassar College

Summer Undergraduate MSTP Research Program

Mentor: Andrew Russo, PhD, Professor, Molecular Physiology and Biophysics

**46**

**Using Whole Genome Sequencing to Identify Mutations in *E. coli* Leading to Cefsulodin Resistance**

Jade Hays, Buena Vista University

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: David Weiss, PhD, Professor, Microbiology and Immunology

**47**

**Terazosin's Effect on the Brain Metabolism of C57BL/6J Mice**

Zach Elias, University of Dubuque

Summer Undergraduate MSTP Research Program

Mentor: Nandakumar Narayanan, MD, PhD, Associate Professor, Neurology

**48**

**The Effects of Glycerol Monolaurate Based Pharmaceuticals on the Function of T Cells**

Francois LeSage, Andrews University

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Jon Houtman, PhD, Associate Professor, Microbiology and Immunology

**49**

**Midbrain Dopaminergic Optogenetic Stimulation Modulates Interval Timing in Mice**

Gabriel Gaudencio, University of Iowa

Summer Undergraduate MSTP Research Program

Mentor: Nandakumar Narayanan, MD, PhD, Associate Professor, Neurology

**50**

**CRISPRi screening of essential genes in the anaerobe *C. difficile* and characterization of operon important for cell division**

Andres Orea, California State University, Bakersfield

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: David Weiss, PhD, Professor, Microbiology and Immunology

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**Novel roles of iRhom2-dependent EGFR signaling in obesity-associated adipose tissue remodeling**

Andreas Kantartzis, Geneva College

Summer Undergraduate MSTP Research Program

Mentor: Thorsten Maretzky, PhD, Assistant Professor, Internal Medicine

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**The inhibitory domain of IRF7 is required for SAMHD1 interaction**

Zulymar Ramos, University of Puerto Rico at Arecibo

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Li Wu, PhD, Professor, Microbiology and Immunology

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**Investigating the role of FMNL2 in the response of epithelial cells to force**

Gabriella Lott, College of Saint Benedict

Summer Undergraduate MSTP Research Program

Mentor: Kris DeMali, PhD, Professor, Biochemistry

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**Engineering *E. coli* Nissle 1917 to be a Methylotroph that Degrades Trimethylamine**

Emma Thames, Illinois Wesleyan University

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Bradley Jones, PhD, Professor, Microbiology and Immunology

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**MICAL proteins as a potential link between redox state and synaptic instability in bipolar disorder**

Jacqueline Mehr, Rutgers University

Summer Undergraduate MSTP Research Program

Mentor: Aislinn Williams, MD, PhD, Assistant Professor, Psychiatry

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**Screening of essential genes in *C. difficile* with CRISPRi identifies operon important in cell wall biogenesis**

Facundo Torres, Kean University

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Craig Ellermeier, PhD, Professor, Microbiology and Immunology

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**Assessing effects of muscle-specific insulin/IGF-1 receptor knockouts on mitochondrial dysfunction and mito-ER interaction**

Shrey Patel, University of Illinois at Urbana-Champaign

Summer Undergraduate MSTP Research Program

Mentor: Brian O'Neill, MD, PhD, Assistant Professor, Internal Medicine

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**Conservation of HSV-1 pUL51 Homologs Interaction with Dynactin**

My Tran, Southern Illinois University, Edwardsville

Summer Microbiology Research Experience for Undergraduates (REU) Program

Mentor: Richard Roller, PhD, Professor, Microbiology and Immunology

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**Perceived stress of the Latinx community during the COVID-19 pandemic**

Meghan Cantu, University of Iowa

Louis Stokes Alliance for Minority Participation (UI LSAMP)

Mentor: Emily Kroska, PhD, Assistant Professor, Psychological and Brain Sciences

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**The Interaction Between HuD and Tau in hPSC-Derived Neurons**

Prateek Raikwar, The University of Iowa

Summer Undergraduate MSTP Research Program

Mentor: Marco Hefti, MD, Assistant Professor, Pathology

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**Measuring and Characterizing Bacterial Responses to Drug Delivery throughout the Lungs**

DJ Guillory, University of Iowa College of Engineering

Louis Stokes Alliance for Minority Participation (UI LSAMP)

Mentor: Jennifer Fiegel, PhD, Associate Professor, Chemical and Biochemical Engineering

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**A Systematic Evaluation of Freeze-Thaw Cycles on Plasma Samples Used for Targeted Metabolomics**

Jovan Tormes Vaquerano, University of Massachusetts Boston

Summer Undergraduate MSTP Research Program

Mentor: Eric Taylor, PhD, Associate Professor, Molecular Physiology and Biophysics

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**The localization and assembly of the molecular chaperone complex formed by RuvBL proteins in *Xenopus laevis***

Quinn Mattison, University of Iowa

Louis Stokes Alliance for Minority Participation (UI LSAMP)

Mentor: Daniel Weeks, PhD, Professor, Biochemistry



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**Investigating the effects of prenatal stress on the neurobehavioral aspects of the striatum: mouse strain variability**

Elyse Vetter, Pepperdine University

Summer Undergraduate MSTP Research Program

Mentor: Hanna Stevens, MD, PhD, Associate Professor, Psychiatry

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**Understanding Embryo Development in *Potamopyrgus antipodarum***

Ruby Sanchez, University of Iowa

Louis Stokes Alliance for Minority Participation (UI LSAMP)

Mentor: Maurine Neiman, PhD, Professor, Biology

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**Austin studies Austin: Determining the molecular defects of Congenital Muscular Dystrophy**

Austin Xiong, Amherst College

Summer Undergraduate MSTP Research Program

Mentor: Lori Wallrath, PhD, Professor, Biochemistry

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**Look Before You LEEP**

Allison Frahm, University of Iowa

Premed Student Summer Research Internship

Mentor: Colleen Stockdale, MD, Professor, Obstetrics and Gynecology

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**Endopolyploidy in *Potamopyrgus antipodarum***

Josie Bliss, Liberal arts and sciences

Iowa Biosciences Academy (IBA)

Mentor: Maurine Neiman, PhD, Professor, Biology

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**Urologic features of Spinal Muscular Atrophy**

Emily Kalmanek, University of Iowa

Premed Student Summer Research Internship

Mentor: Angelena Edwards, MD, Assistant Professor, Urology

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**Differences in Barred Owl (*Strix varia*) observations with land cover along an urban-rural gradient**

Amanda Caraballo, University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Heather Sander, PhD, Associate Professor, Geographical and Sustainability Sciences

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**Does RAAS Antagonism increase the COVID-19 related mortality in patients with obesity-related Hypertension?**

Oloigbe Ofori, College Of Liberal Arts and Science

Premed Student Summer Research Internship

Mentor: Marcelo Correia, MD, PhD, Assistant Professor, Internal Medicine

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**Utility of a Diverse Array of Covid-19 Diagnostic Tests as Tools for Combating SARS-CoV2**

Floyd Evans, Jr., University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Jeff Murray, MD, Professor, Pediatrics

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**Characterization of protein corona on gold nanoparticles via SDS-PAGE and mass spectrometry**

Nolan Burson, University of Iowa

Individual Arrangement

Mentor: Jennifer Fiegel, PhD, Associate Professor, Chemical and Biochemical Engineering

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**Zebra fish as a developmental model for heart and eye conditions in Bardet-Biedl syndrome**

Camila Sofia Gomez, College of liberal arts

Iowa Biosciences Academy (IBA)

Mentor: Diane Slusarski, PhD, Professor, Anatomy and Cell Biology

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**Role of Innate Immune System in a Mouse Model of Migraine**

Megan Conrad, University of Iowa

Individual Arrangement

Mentor: Andrew Russo, PhD, Professor, Molecular Physiology and Biophysics

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**Reduction of paraproteinemia caused kidney damage in murine models**

Bryan Guevara, The University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Dao-Fu Dai, MD, PhD, Assistant Professor, Pathology

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**Brain-wide Detection of CGRP Neurons**

Abigail Davison, University of Iowa

Individual Arrangement

Mentor: Andy Russo, PhD, Professor, Molecular Physiology and Biophysics

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**Acceptance and Commitment Therapy Overview**

Felipe Herrmann, Psychology Brain and Sciences

Iowa Biosciences Academy (IBA)

Mentor: Emily Kroska, PhD, Assistant Professor, Psychological and Brain Sciences

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**Is the Posterior Thalamic Output Circuitry a Necessary Component of Migraine Pathophysiology?**

Nicholas Dorricott, University of Bath

Individual Arrangement

Mentor: Andrew Russo, PhD, Professor, Molecular Physiology and Biophysics

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**Dysfunctions of Pathogenic Mutants of the Essential Calcium Sensor Calmodulin**

Emily Herum, University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Madeline Shea, PhD, Professor, Biochemistry

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**Optogenetic cerebellum stimulation: Is it sensory or motor?**

Thomas Duong, University of Iowa

Individual Arrangement

Mentor: Andrew Russo, PhD, Professor, Molecular Physiology and Biophysics

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**Beat by Beat: Computer-Aided Diagnosis of Echocardiograms by Humans and Pigeons**

Odysseus Orr, University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Edward Wasserman, PhD, Professor, Psychological and Brain Sciences

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**Corticosterone and fear generalization**

Samuel Eliassen, University of Iowa

Individual Arrangement

Mentor: Jason Radley, PhD, Associate Professor, Psychological and Brain Sciences

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**Calmodulin Binds Conserved Motifs in Fibroblast Growth Factor Homologous Factors**

Cade Rahlf, University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Madeline Shea, PhD, Professor, Biochemistry

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**Mice with DRP1 Depletion in Skeletal Muscle are Resistant to Age-related Weight Gain**

Joshua Peterson, The University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Marcelo Correia, MD, PhD, Assistant Professor, Internal Medicine

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**Mice with DRP1 Depletion in Skeletal Muscle are Resistant to Age-related Weight Gain**

Cally Tucker, University of Iowa, Iowa Biosciences Academy

Iowa Biosciences Academy (IBA)

Mentor: Marcelo Correia, MD, PhD, Assistant Professor, Internal Medicine

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**Divergent regulation of target genes by Cut homeodomain transcription factor**

Isabella Holland, University of Iowa College of Liberal Arts and Sciences

Individual Arrangement

Mentor: Daniel Eberl, PhD, Professor, Biology

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**Focal vascular and neuronal response to radiation in normal retinal tissue: A pilot study**

Anthony Vitale, University of Iowa

Iowa Biosciences Academy (IBA)

Mentor: Isabella Grumbach, MD, PhD, Professor, Internal Medicine

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**Role of Ion Transporters in Drosophila Mechanosensory Support Cells**

Ashleigh Jacobs, University of Iowa

Individual Arrangement

Mentor: Daniel Eberl, PhD, Professor, Biology

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**B BETA 2's effects on neurite outgrowth**

Grace Kollman, College of liberal arts and science

Individual Arrangement

Mentor: Stefan Strack, PhD, Associate Professor, Neuroscience and Pharmacology

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**Defining the role of p23 in collective cell migration**

Anna Ramsey, University of Iowa

Individual Arrangement

Mentor: Tina Tootle, PhD, Associate Professor, Anatomy and Cell Biology

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**Role of the Skeletal Muscle BBSome in Diabetes**

Younes Rouabhi, University of Iowa

Individual Arrangement

Mentor: Kamal Rahmouni, PhD, Professor, Neuroscience and Pharmacology

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**A Thermoreversible Gel for Topical Delivery of Immunostimulants.**

Jayden Shin, University of Iowa

Individual Arrangement

Mentor: Aliasger Salem, PhD, Professor, Biomedical Engineering

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**Quantifying Biotic Activity on Environmental Films**

Hala Soliman, Carleton College

Individual Arrangement

Mentor: Scott Shaw, PhD, Associate Professor, Chemistry

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**Chemogenetic inhibition of deep cerebellar nuclei: effects on migraine-like behaviour**

Joseph Tutt, University of Bath

Individual Arrangement

Mentor: Andrew Russo, PhD, Professor, Molecular Physiology and Biophysics

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**Hydrophobic Drug Loading into Thermosensitive Hydrogels Impacts Rheological Properties**

Grace Williamson, Chemical Engineering & Pharmacy

Individual Arrangement

Mentor: Jennifer Fiegel, PhD, Associate Professor, Chemical and Biochemical Engineering

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**Analysis of IKK $\epsilon$  and SAMHD1 interaction with IRF7**

XINNUO ZHAO, Department of Microbiology and Immunology

Individual Arrangement

Mentor: Li Wu, PhD, Professor, Microbiology and Immunology