

# AISLING S. DUGAN

## Curriculum Vitae

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<https://www.assumption.edu/people-and-departments/directory/aisling-dugan-phd>

### EDUCATION

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2003 - 2007

**Doctor of Philosophy in Biology and Medicine**

Brown University, Providence, RI

Pathobiology Graduate Program

Mentor: Walter J. Atwood, Ph.D.

1996 - 2000

**Bachelor of Arts in Biological Science; Minor in Chemistry**

Smith College, Northampton, MA

### FACULTY POSITIONS & TEACHING EXPERIENCE

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2022 – present

**Senior Lecturer**

Biology Education, Dept. of Molecular Microbiology and Immunology  
Brown University, Providence RI

BIOL 0510 – Introductory Microbiology

BIOL 0530 – Principles of Immunology

BIO1945 – Outbreak & Infection s: Harnessing History and  
Preventing Future Epidemics

2021

**Lecturer**

Biology Education, Dept. of Molecular Microbiology and Immunology  
Brown University, Providence RI

BIOL 0530 – Principles of Immunology

2016 –2021

**Associate Professor**

Dept. of Biological and Physical Sciences, Assumption University,  
Worcester, MA

BIO275 CSL – Special Topics: Infectious and Epidemic Diseases

BIO410CSL/BIO410L – Immunology lecture and laboratory  
(Community Service Learning component)

BIO250/BIO250L – Microbiology lecture and laboratory

BIO340L – Molecular and Cellular Biology laboratory

BIO160L – Concepts in Biology laboratory

BIO102L – Human Biology in Health and Disease laboratory

HON300/HON444 – Honors Thesis (5 students)

BIO490 – Independent Study in Biology (2 research students)

INT300 – Internship (Faculty mentor for 2 off-campus internships)

Sept. 2010 – present

**Assistant Professor**

Dept. of Natural Sciences, Assumption College, Worcester, MA

BIO410/BIO410L – Immunology lecture and laboratory

BIO250/BIO250L – Microbiology lecture and laboratory

BIO160L – Concepts in Biology laboratory  
BIO102/BIO102L – Human Biology in Health and Disease lecture and laboratory  
BIO275 – Guest Lecturer for Special Topics: Trees  
HON300/HON444 – Honors Thesis (3 students)  
BIO490 – Independent Study in Biology (4 research students)  
INT300 – Internship (Faculty mentor for 2 off-campus internships)  
Summer (10 weeks) undergraduate research projects (6 students)

July 2007-08, 2013-21

**Instructor**

Summer@Brown Precollege Program, Brown University, Providence, RI  
Moral Medicine: Questions in Bioethics at the Cutting Edge  
Psychopathology: Investigating the Biology and Psychology of Mental Illness  
Bacteriology: The Good, the Bad, the Deadly with laboratory  
The Great Diseases: Cancer, Heart Disease, Diabetes, and Epidemics  
Brain and Behavior  
Germs in the New with laboratory

2009-2010

**Postdoctoral TEACR (Training in Education And Critical Research Skills) Fellow**

Institutional Research and Academic Career Development Award, NIH/NIGMS, Tufts University

Aug. 2009 – Aug. 2010

**Curriculum Developer & Content Specialist**

Tufts University, Boston, MA  
Great Diseases: A Collaborative Approach to Real World Science in the Classroom, NIH Research Education Grant (R25RR026012-01),

March 2010 & 2011

**Guest Lecturer in Microbiology**

Wellesley College, Wellesley, MA

Fall 2007

**Mentored Co-Instructor**

Rhode Island College, Providence, RI  
Introductory Biology lecture and laboratory

2004-2005

**Teaching Assistant and Lecturer**

Brown University, Providence, RI  
Medical Microbiology  
Cancer Biology

**RESEARCH EXPERIENCE**

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2016 – 2021

**Associate Professor**

Dept. of Biological and Physical Sciences,  
Assumption University, Worcester, MA  
Research program: Pathogen and host interactions

2016 - 2017

**Visiting Research Professor – Sabbatical**

Dept. of Molecular Biology, Cell Biology, and Biochemistry,  
Brown University, Providence, RI  
Laboratory of Walter J. Atwood, PhD

Research project: Role of exosome in human JC polyomavirus infection

2010 –2016

**Assistant Professor**

Dept. of Natural Sciences, Assumption College, Worcester, MA  
Research program: The relationship between the human virus, BK virus, and the host cell it infects.

2009 – 2010

**Howard Hughes Postdoctoral Research Associate**

Dept. of Microbiology, Tufts University, Boston, MA  
Laboratory of Ralph R. Isberg, Ph.D.  
Research project: The role of host cell kinases and phosphatases in *Legionella pneumophila* infection.

2007 – 2008

**Postdoctoral Research Associate**

Dept. of Molecular Biology, Cell Biology, and Biochemistry,  
Brown University, Providence, RI  
Laboratory of Walter J. Atwood, PhD  
Research project: The effect of innate antimicrobial peptides on polyomavirus infection.

2003 – 2007

**Graduate Student**

Pathobiology Graduate Program, Brown University, Providence, RI  
Laboratory of Walter J. Atwood, Ph.D.  
Research project: Interactions between the human pathogen, BK Virus, and sialic acid receptors of kidney host cells.

2001- 2003

**Research Assistant and Laboratory Manager**

Dept. of Pathology, Beth Israel Deaconess Medical Center, Boston, MA  
Laboratory of Arthur Mercurio, Ph.D.  
Research project: siRNA knockdown of integrins and Rho GTPases to study the effect of these proteins on breast cancer cells *in vitro* and *in vivo*.

2000 - 2001

**Antibody Research Associate**

BioSource International, Hopkinton, MA  
Duties: Conjugated peptides, affinity purified antibodies from serum, conducted ELISAs to assay antibody titer.

Summer 1999

**Intern**

Dept. of Microbiology, University of Michigan, Ann Arbor, MI  
Laboratory of Don Clewell, Ph.D.  
Research project: The exchange of plasmids carrying antibiotic resistance genes in the bacterial species, *Enterococcus faecalis*.

## PUBLICATIONS

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Note about publications below:

- **First author** position is assigned to the researcher who contributed the most intellectually and experimentally toward the publication of the work. This author organized and wrote most of the publication.
- **Middle authors** contributed some time, provided intellectual interpretation, conducted at least one experiment (and often many), and either wrote some sections of the publication and/or provided feedback during publication drafts. The contributions are organized such that second author contributed more than third author, the third author contributed more than fourth author, etc.

- **Last author** (corresponding author) is the head of the lab who mentors researchers, reviews manuscript, and funds most of the project.
1. Love-Morris J, Gee GV, O'Hara BA, Assetta B, Armstead B, **Dugan AS**, Haley SA, Atwood WJ. .. Biogenesis of JC polyomavirus associated extracellular vesicles. *Journal of Extracellular Biology*. 2022. 1(5): e43.
  2. Love-Morris J, Gee GV, O'Hara BA, Assetta B, Atkinson AL, **Dugan AS**, Haley SA, Atwood WJ. JC polyomavirus uses extracellular vesicles to infect target cells. *mBio*. 2019. 10 (2): e00379-19.  
\*editor's pick  
Contribution: Data from multiple experiments, designed an experimental system and protocols that were useful throughout the paper, intellectual contribution, interpretation of results, wrote some sections of the paper, and revision of manuscript before publication
  3. Stroh LJ, Gee GV, Blaum BS, **Dugan AS**, Feltkamp MCW, Atwood WJ. Trichodysplasia Spinulosa-associated polyomavirus employs a displayed binding site on VP1 to engage sialylated glycolipids. *Plos Pathogen*. 2015. 11 (8): e1005112.  
Contribution: Designed experimental system that was useful in this paper and revision of manuscript before publication
  4. Asrat S, **Dugan AS**, Isberg RR. The frustrated host response to *Legionella pneumophila* is bypassed by MyD88-dependent translation of pro-inflammatory cytokines. *Plos Pathogen*. 2014. 10 (7): e1004229.  
Contribution: Data from multiple experiments, intellectual contribution, interpretation of results, wrote of some sections of the paper, and revision of manuscript before publication
  5. Bouley SJ, Maginnis MS, Derdowski A, Gee GV, O'Hara BA, Nelson CD, Bara AM, Atwood WJ, **Dugan AS**. Host cell autophagy promotes BK virus infection. *Virology*. 2014. 456-457: 87-95.  
Corresponding author of this manuscript. Underlined authors were my undergraduate students
  6. Barry KC, Fontana MF, Portman JL, **Dugan AS**, Vance RE. IL-1 $\alpha$  Signaling Initiates the Inflammatory Response to Virulent *Legionella pneumophila* *In Vivo*. *Journal of Immunology*. 2013. 190(12):6329-39.  
Contribution: Intellectual contribution and revision of manuscript before publication
  7. Jordan JA, Manley K, **Dugan AS**, O'Hara BA, Atwood WJ. Transcriptional regulation of BK virus by nuclear factor of activated T cells. *Journal of Virology*. 2010. 84 (4): 1722-30.  
Contribution: Data for one figure of this paper, intellectual contribution, interpretation of results, wrote one part within the results and methods sections of the paper, and revision of manuscript before publication
  8. Li Z, **Dugan AS**, Bloomfield G, Skelton J, Ivens A, Losick V, Isberg RR. The amoebal MAP kinase response to *Legionella pneumophila* is regulated by DupA. *Cell Host & Microbe*. 2009. 6 (3): 253-267.  
Contribution: Data from multiple experiments, intellectual contribution, interpretation of results, wrote some sections of the paper, and revision of manuscript before publication
  9. Gasparovic ML, Maginnis MS, O'Hara BA, **Dugan AS**, Atwood WJ. Modulation of PML protein expression regulates JCV infection. *Virology*. 2009. 390 (2): 279-288.  
Contribution: Assistance with experiments, intellectual feedback, and revision of manuscript before publication

10. **Dugan AS**, Maginnis MS, Jordan JA, Gasparovic ML, Manley K, Page R, Williams G, Porter E, O'Hara BA, Atwood WJ. Human alpha-defensins inhibit BK Virus by aggregating virions and blocking binding to host cells. *Journal of Biological Chemistry*. 2008. 283 (45): 31125-31132.  
Major contributor of publication
11. **Dugan AS**, Gasparovic ML, Atwood WJ. Direct correlation between sialic acid binding and infection of cells by two human polyomaviruses (JCV and BKV). *Journal of Virology*. 2008. 82 (5): 2560-2564.  
Major contributor of publication
12. **Dugan AS**, Gasparovic ML, Tsomaia N, Mierke DF, O'Hara BA, Manley K, Atwood WJ. Identification of amino acid residues in BK virus VP1 that are critical for viability and growth. *Journal of Virology*. 2007. 81 (21): 11798-11808.  
Major contributor of publication
13. **Dugan AS**, Eash S, Atwood WJ. Update on BK Virus entry and intracellular trafficking. *Transplant Infectious Disease*. 2006. 8 (2): 62-67.  
Major contributor of publication
14. Gee GV, **Dugan AS**, Tsomaia N, Meirke DF, Atwood WJ. The role of sialic acid in human polyomavirus infections. *Glycoconjugate Journal*. 2006. 23 (1-2): 19-26.  
Contribution: Review of literature, intellectual interpretation, wrote a major section of this paper, and revision of manuscript before publication
15. Lipscomb EA, Simpson KJ, Lyle SR, Ring JE, **Dugan AS**, Mercurio AM. The alpha6beta4 integrin maintains the survival of human breast carcinoma cells in vivo. *Cancer Research*. 2005. 65 (23): 10970-10976.  
Contribution: Data from multiple experiments, intellectual contribution, interpretation of results, and revision of manuscript before publication
16. **Dugan AS**, Eash S, Atwood W. An N-linked glycoprotein with alpha(2,3)-linked sialic acid is a receptor for BK virus. *Journal of Virology*. 2005. 79 (22): 14442-14445.  
Major contributor of publication
17. Elphick GF, Querbes W, Jordan JA, Gee GV, Eash S, Manley K, **Dugan A**, Stanifer M, Bhatnagar A, Kroeze W, Roth BL, Atwood WJ. The human polyomavirus, JCV, uses serotonin receptors to infect cells. *Science*. 2004. 306 (5700): 1380-1383.  
Contribution: Data from one experiment, intellectual feedback, and revision of manuscript before publication
18. Simpson KJ, **Dugan AS**, Mercurio AM. Functional analysis of the contribution of RhoA and RhoC GTPases to invasive breast carcinoma. *Cancer Research*. 2004. 64 (23): 8694-8701.  
Contribution: Data from multiple experiments and revision of manuscript before publication
19. Lipscomb EA, **Dugan AS**, Rabinovitz I, Mercurio AM. Use of RNA interference to inhibit integrin (alpha6beta4)-mediated invasion and migration of breast carcinoma cells. *Clinical & Experimental Metastasis*. 2003. 20 (6): 569-576.  
Contribution: Data from multiple experiments, intellectual feedback, and revision of manuscript before publication

(Underlined name indicated an Assumption undergraduate co-author)

- September 2022 *Innate Immunity to Viruses & Adaptive Immunity to Viruses* guest lectures  
BIO1560: Virology, Brown University
- June 2018 *Out of the Classroom and into the Community: Integrating a Service Learning Project to an Immunology course*  
Project Kaleidoscope (PKAL) Regional Summer Meeting,  
Salem State University, Salem, MA
- Nov. 2017 *A Virus in Cell Clothing: Mapping Viral Infection in Human Brain Cells.*  
Assumption College, Student Science Club Seminar Series, Worcester, MA
- Sept. 2017 *A Virus in Cell Clothing*  
Assumption College, Provost office sponsored “Lunch and Learn” seminar series,  
Worcester, MA
- Sept. 2017 *A Virus in Cell Clothing.*  
Rhode Island College, Biology Dept. Colloquium Seminar Series, Providence, RI
- June 2017 *Extracellular Vesicle Involvement in JC Polyomavirus Infection*  
ASM (American Society for Microbiology) Microbe Conference 2017,  
New Orleans, LA
- July 2014 *Host Cell Autophagy Promotes BK Virus Infection.*  
XIVth International Union of Microbial Sciences (IUMS), Montreal, Canada
- April 2014 *The Ins and Outs of BK Virus Infection.*  
Bryant University, Dept. of Science and Technology Seminar Series, Smithfield, RI
- Nov. 2012 *Virus vs. Host: Lessons Learned from BK Virus Infection,*  
Hamilton College, Biology Dept. Seminar Series, Clinton, NY
- Nov. 2011 *How Human Defensins Protect against Viral Infection.*  
Rhode Island College, Biology Dept. Seminar Series, Providence, RI
- June 2011 *Alpha-defensin 5, HD5, Inhibits BK Virus Infection.*  
Novartis Institutes for Biomedical Research, Cambridge, MA
- April 2011 *The Immune System Strikes Back: Human Defensins Protect against Viral Infection.*  
Assumption College, Natural Science Dept. Seminar Series, Worcester, MA
- July 2008 *Alpha-defensins, HNP-1 and HD5, Inhibit Primate Polyomavirus Infection of Host Cells.*  
American Society for Virology, Ithaca, NY
- Sept. 2007 *The Role of Charged Amino Acids in VP1 in BK Virus Lifecycle.*  
4th International Conference on Polyomavirus and Human Disease, Barcelona, Spain
- Aug. 2007 *Identification of Amino Acid Residues in BK Virus VP1 Critical for Viability and Growth.*  
Brown University, Annual Retreat for Pathobiology Graduate Program, Bristol, RI
- July 2006 *BK Virus Interaction with Sialic Acid Receptors on Host Cells.*  
American Society for Virology, Madison, WI

Sept. 2005      *An N-linked Glycoprotein with  $\alpha(2,3)$ -linked Sialic Acid is a Receptor for BK Virus.*  
3rd International Conference on Polyomavirus and Human Disease, Providence, RI

### **CONFERENCE ABSTRACTS - POSTER PRESENTATIONS**

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- June 2021      *Tracking an Outbreak: A Historic Biography & Contact Tracing Training to Study Infectious Disease*  
American Society for Microbiology Conference for Undergraduate Educators, Online
- November 2019      *Using the Kitchen Sponge as a Pedagogical Tool to Investigate Bacterial Abundance, Composition and Resistance*  
American Society Microbiology 54<sup>th</sup> Annual Regional I Meeting, Randolph, MA  
\* Student authors - Sydney Knoll & Nicholina Allain
- January 2019      *The Microbial Community of Kitchen Sponges: Experimental Study Investigating Bacterial Number, Composition, and Resistance*  
Pioneer Valley Microbe Symposium, Amherst, MA  
\* Student presenters - Sydney Knoll & Nicholina Allain
- May 2017      *Exosome Involvement in JC Polyomavirus Infection*  
6<sup>th</sup> International Society for Extracellular Vesicles Conference, Toronto, Canada
- April 2017      *Exosome Involvement in JC Polyomavirus Infection*  
2<sup>nd</sup> Northeast Association for Clinical Microbiology and Infectious Disease & Northeast Branch of American Society for Microbiology (NACMID-NEB-ASM) Conference, Wakefield, MA
- May 2014      *Host Cell Autophagy Promotes BK virus Infection*  
American Society for Microbiology 114<sup>th</sup> General Meeting, Boston, MA
- Oct. 2013      *RAW264.7 Cellular Response to Dermacoccal and Staphylococcal Infection*  
American Society for Microbiology: 48th Annual Regional Meeting, Storrs, CT  
\* Student presenters - Anne (Maggie) Bara & Hieu Nguyen
- June 2012      *The Role of Autophagy in BK Virus Infection of Host Cells*  
American Society for Microbiology 112<sup>th</sup> General Meeting, San Francisco, CA  
Faculty mentor for student project:  
\* Student presenter - Stephanie Bouley  
Received Outstanding Student Poster Award
- April 2012      *The Role of Autophagy in BK Virus Infection of Host Cells*  
Council of Undergraduate Research Posters on the Hill, Washington, D.C.  
\* Student presenter - Stephanie Bouley  
76 of 850 abstracts accepted
- Oct. 2011      *The Role of Autophagy in BK virus Infection.*  
American Society Microbiology 46<sup>th</sup> Annual Regional I Meeting, Brockton, MA
- Feb. 2006      *BK Virus Interaction with Sialic Acid on Receptors of Host Cells*  
Keystone Symposium: Cell Biology of Virus Entry, Replication and Pathogenesis, Santa Fe, NM

## CAREER PRESENTATIONS, TEACHING INNOVATIONS, & OTHER SERVICE

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- 2021 **Workshop Presenter**, “Contact Tracing used in Infectious Disease Course,” Community Service Learning Celebration and Faculty Workshop, Assumption University
- 2020 **Faculty Mentor**, “Exploring Wellness” Interest Circle, Living Learner Center, Assumption University
- 2020 **Panelist**, Assumption College of Liberal Arts and Sciences (CLAS) Dinner and Discussion: Developing a mission statement for CLAS
- 2011-2019 **Organizer & Presenter**, “How to get a Summer Research Internship!” Natural Science Dept. Seminar Series, Assumption College
- May 2018 **Workshop Presenter**, “Integrating a Community Service Learning Component into BIO410: Immunology,” Community Service Learning Celebration and Faculty Workshop, Assumption College
- May 2017 **Panelist**, “Career Opportunities in the Sciences,” Worcester State University
- Aug. 2016 **Presenter**, “Teaching at a Primarily Undergraduate Institute: Career Paths after Graduate School” Brown University, Office of Graduate and Postdoctoral Studies
- Feb. 2015 **Faculty Participant**, Exploring Majors Fair, Assumption College
- Jan. 2015 **International Group Travel Leader – 9-day trip to Costa Rica**  
Organized and lead environmental and cultural student trip to Costa Rica  
11 members of the Assumption community participated
- 2014 - present **Reviewer** for scientific journals:  
*Microbial Pathogenesis*  
*Journal of Molecular and Genetic Medicine*
- March 2014 **International Group Travel Leader – 7-day trip to Belize**  
Organized and lead biodiversity and cultural student trip to Belize  
7 members of the Assumption community participated
- April 2012 **Presenter**, “Landing the Perfect Internship,” Student organized event in residential hall, Assumption College
- Feb. 2011, '13, '14 **Presenter**, “How BK virus infects host cells”, Faculty Showcase: Assumption College, Natural Science Dept. Seminar Series, Worcester, MA. (Highlighting faculty research to recruit students for summer research projects.)
- Oct. 2011 **Presenter**, “How to reduce stress!” Student organized event in residential hall, Assumption College
- May 2011 **Panelist**, “Career Panel: A Career at a Liberal Arts College,” Tufts University, Department of Microbiology, Boston, MA
- April 2011 **Judge**, Undergraduate Research Symposium, Assumption College



## PROFESSIONAL DEVELOPMENT & TEACHING ENRICHMENT

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- 2022 - present      **STEM Ed Friday**, Brown University – Regular attendee
- 2022- present      **Large Class SIG**, Brown University – Regular attendee
- 2023                  **Seminar for Transformation Around Anti-Racist teaching (START)**, Brown University
- 2023                  **Teaching Seminars/Workshops**  
*Keep on Teaching: Support and motivate your students.* The Chronicle of Higher Education
- 2022                  **Teaching Seminars/Workshops**
- *How to Support International Students*, Sheridan Center, Brown University
  - *Can We Make Grace the Norm in our Classrooms?*, Horizon’s Seminar, Brown University
  - *Inclusive STEM Environments Inside and Outside the Classroom*, American Association of the Advancement of Sciences (AAAS)
  - *STEM Learning Through Community Engagement*, AAAS
  - *Engaging Students in Course Based Undergraduate Research Experience*, AAAS
  - *The Faculty Role in Creating Inclusive STEM Environments*, AAAS
- August 2020        **Online Teaching Training**, D’Amour Center for Teaching Excellence  
Assumption College, Worcester, MA
- 2020                  **Reflections on Race**, Cross Cultural Center  
Assumption University, Worcester, MA
- 2019-2020        **Course Innovation Academy**, D’Amour Center for Teaching Excellence  
Assumption College, Worcester, MA
- August 2019       **First-Year Dinner Conversation Workshop**  
Assumption College, Worcester, MA
- May 2019           **Educational Equity & Teacher Diversity Policy Forum**  
Annenburg Institute, Brown University, Providence, RI
- May 2019           **Invitation to Learning: Emotions, Inclusivity, and Community Symposium**  
Assumption College, Worcester, MA
- June 2018          **Project Kaleidoscope (PKAL) Regional Summer Meeting**  
Teaching and pedagogy workshops  
Salem State University, Salem, MA
- 2017-2019        **D’Amour Center for Teaching Excellence Workshops & Lectures**  
Assumption College, Worcester, MA
- Food for Thought: Learning from Teaching Online (2020)
  - Food for Thought: Student Perspectives on Teaching (2019)

- Innovations in High Education: Teaching Distracted Minds (2019)
- Food for Thought: Meditation and Mindfulness (2019)
- Making your Scholarship Public (2018)
- Food for Thought: Inspired by Index Cards: Low-Tech Tools for Teaching (2017)

- May 2017, '18, '19      **Community Service Learning Celebration and Faculty Workshop,**  
Assumption College
- May 2014                **Getting Started as a Microbiologist at a Primarily Undergraduate Institution (PUI) Workshop**  
American Society for Microbiology 114<sup>th</sup> General Meeting  
Boston, MA
- April 2014              **Teaching and Technology Mini Conference**  
Center for Teaching Excellence and Information Technology  
Assumption College, Worcester, MA
- Jan. 2014                **Designing Scientific Teaching Tools for Biochemistry and Molecular Biology (BMB) Education**  
American Society for Biochemistry and Molecular Biology,  
Simmons College, Boston, MA
- Oct. 2010                **Microbial Genome Annotation Regional Training (IMG-ACT)**  
Department of Energy Joint Genome Institute,  
Worcester State University, Worcester, MA
- July 2010                **Graduate Institute for Teaching (GIFT)**  
Summer 4-week Intensive Workshop on Teaching,  
Tufts University, Medford, MA
- April 2010                **Process Oriented Guided Inquiry Learning (POGIL) Training**  
National Science Foundation (NSF) funded, Newport, RI
- 2005-2008                **Teaching Certificate I and III Program**  
Sheridan Center for Teaching and Learning, Brown University

## **PRESS / MEDIA**

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### Teaching

- The Brown Daily Herald. "[Students, faculty react to a return to in-person midterms](#)" January 26, 2023

### Assumption Contact Tracing Project:

- Boston 25 News. "[Assumption Students get Trained as Contact Tracers as Class Incorporate Pandemic Skills.](#)" March 16, 2021
- Spectrum News 1. "[Assumption University Students Training as Contact Tracers to Help During Pandemic.](#)" February 18, 2021
- WMPR FM NPR radio. "[Student spend spring semester studying to be contact tracers.](#)" February 18, 2021

- Assumption University News and Events. [“Assumption Students Training as Contact Tracers to Assist Worcester in Pandemic Response.”](#) February 16, 2021
- Worcester Business Journal [“Assumption Student Training to Conduct Contact Tracing.”](#) February 17, 2021
- Worcester Telegram and Gazette. [College Town: Assumption Students Training to Become Contact Tracers.”](#) February 17, 2021
- Mass Live [“Assumption University students spending spring training to be COVID Contact Tracers”](#) February 16, 2021

## COVID-19:

- Spectrum News 1. [“Making Sense of New CDC Study on COVID-19.”](#) April 14, 2020

## FELLOWSHIPS AND GRANTS

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2022	Brown University Faculty Mentor to Undergraduate Lab Media Co-Designer Fellowship (Student Claire Brown Awarded \$1475)
2019	Assumption College Faculty Development Grant Title: You are what you Eat: Diet Affects Stable Isotope Ratios in Hair (Total Awarded \$3500)
2018-2020	Assumption College Course Load Reduction Grant Title: Investigating the Microbial World of the Household Sponge (Total Award: teaching course reduction in two courses over two years)
2016	Assumption College Faculty Development Grant Title: Secrets to Infection: Investigating how cell cycle influence susceptibility to BK virus Infection (Total Awarded \$3000)
2014	Assumption College Faculty Development Grant Title: The role of cell cycle in BK virus infection of host Cells (Total Awarded \$4000)
2013	Assumption College Honors Program Research Fellowship Faculty mentor to Hieu Nguyen ‘15 Title: Human immune response to bacterial Infection (Total awarded \$7000)
2011-2012	American Society for Microbiology Undergraduate Summer Fellowship Faculty mentor to Stephanie Bouley ‘12 Title: Determining the role of host autophagy in BK virus infection at Brown University (Student awarded \$4000 plus travel to conference) *39 of 69 applications were funded
2011	Assumption College Honors Program Research Fellowship Faculty mentor to Stephanie Bouley ‘12

- Title: Determining the role of host autophagy in BK virus infection at Brown University  
(Total awarded \$7000)
- 2009-2010      NRSA Postdoctoral Fellowship Grant (F32AI084202-01),  
National Institute of Allergy and Infectious Disease/NIH, Tufts University  
Primary Investigator  
Title: Dissecting the role of ERK and DUSP on *Legionella pneumophila*  
Infection  
(Awarded ~\$65,000 plus benefits)
- 2009-2010      TEACR (Training in Education And Critical Research Skills) Fellowship,  
Institutional Research and Academic Career Development Award, NIH/NIGMS,  
Tufts University  
Trainee  
Title: Dissecting the Role of ERK and DUSP on *Legionella pneumophila*  
Infection  
(Awarded full salary and trainings/workshops for 3 years, but because I  
received NRSA grant I only accepted training)
- 2005-2007      GAANN Training Grant, Pathobiology Graduate Program, Brown University  
Trainee  
Title of Project: Dissecting BK virus receptor Interactions  
(Awarded ~\$70,000 plus benefits)
- 2004-2006      Frederic Poole Gorham Biological Fellowship, Brown University  
Trainee  
Title of Project: Dissecting BK virus receptor Interactions
- Summer 1999    Praxis summer fellowship funded through Smith College  
Dept. of Microbiology, University of Michigan  
Undergraduate Intern  
Title: Antibiotic resistance in *Enterococcus faecalis*  
(Awarded \$2000)
- Summer 1998    Summer Internship Funding Program (SIFP) fellowship through Smith College  
Dept. of Environmental Conservation  
Undergraduate Intern  
Title: Assessing wellness of fisheries in Central New York State  
(Awarded \$2000)

## AWARDS

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- July 2008      Postdoctoral Travel Award, American Society for Virology
- Sept. 2007      Student Travel Award, 4th International Conference on Polyomavirus and Human  
Disease
- Aug. 2006      Charles Kuhn Graduate Award in Disease Pathogenesis, Pathobiology Graduate  
Program, Brown University
- July 2006      Student Travel Award, American Society for Virology
- 1996-2000      Dean's List, Smith College

## **STUDENT PRESENTATIONS AT ASSUMPTION COLLEGE RESEARCH SYMPOSIUM**

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- April 2021 Assumption University Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student projects:
- Marissa Doherty, Jillian Hamblin, Anne Guadalupi, Rachel Ferguson: *The History and Pathogenicity of Methicillin-Resistant Staphylococcus aureus (MRSA)* (poster)
  - Lauren Kuhns: *Understanding the Pathobiology of Yersinia pestis* (poster)
  - Lauren Jakob, Cassie Saniuk, and Olivia Sawicki: *Exploring the Characteristics and Diseases caused by Clostridium botulinum* (oral presentation)
  - Evan Kessinger: *ACE2 and its Involvement in Coronavirus Infections* (oral presentation)
  - Deyana Underwood: *A Review of the 'Flesh-Eating' Bacterium, Streptococcus pyogenes* (oral presentation)
- April 2019 Assumption College Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student projects:
- Lauren Andre: *Utilizing Phenotypic Characteristics and Genetic Sequencing to Identify an Unknown Bacterium* (poster)
  - Christina Forrest: *Identification of an unknown bacterium isolated from Assumption College's Testa Science Center* (poster)
  - Devon Joyce: *Innocent Victims: Exploring the Opioid Exposure of Infants* (oral presentation)
  - Sydney Knoll: *The Microbial Community of Kitchen Sponges: Investigating Bacterial Number, Resistance and Transfer* (poster)
  - Alyssa Masciarelli: *A Community Service Learning Project at AIDS Project Worcester Enriched Immunology Course* (oral presentation)
- April 2018 Assumption College Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student projects:
- Alyssa Masciarelli and Alora Piela: *Investigating the Immune Response of RAW 264.7 Macrophage Cells to Serratia marcescens Infection* (poster)
  - Alysha McGovern: *Identification of a Bacillus Species* (poster)
- April 2016 Assumption College Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student projects:
- Anna Gill And Kaitlyn Riley: *Characterizing an Unknown Bacterium from a Toilet Seat* (poster)
  - Elizabeth Morgan and Alyssa Quigley. *Identifying and Characterizing an Unknown Bacterium Cultured from a Cell Phone* (poster)
  - Alaina Short: *Infection of RAW264.7 Cells by Klebsiella pneumonia Results in an Immunological Response* (poster)
- April 2015 Assumption College Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student projects:
- Lauren Pepi: *Investigating Inhibition of Host Cell Cycle on BK Virus Infection* (poster)
  - Hieu Nguyen: *The Effect of Montamine Analogs on E. coli and S. aureus Growth* (oral presentation)

- Joe Douglass: *Evaluation of the iSTAT Hematocrit and Hemoglobin Tests: Improving clinical practice and outcomes* (oral presentation)
- Shannon Martin: *Localization of EFHC1 protein in Tetrahymena thermophila axonemes using Cryo-ET* (poster)

April 2014

Assumption College Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student projects:

- Lauren Brown & Jane Dreske: *Classification and Characteristics of an Unknown Bacterium* (poster)
- Meaghan Ekstrom & Nicole Stantial: *Determining the Identity of an Unknown Bacterium: Sphingomonas* (poster)
- Kelly Black: *Discovering an Unknown Bacterium* (poster)
- Anne (Maggie) Bara, Rebecca Rood, Samantha Williams, & Sarah Williams: *Identification and Characterization of the Morphological, Metabolic, and Mammalian Immune Response to an Unknown Bacterium* (poster)
- Kinga Piskorz & Tamara Salman: *Identifying an Unknown Bacterium* (poster)
- Paul Kehoe & Jack Mourad: *Isolation and Analysis of Unknown Bacterium from the Lab Bench* (poster)
- Anne (Maggie) Bara & Hieu Nguyen: *RAW264.7 Cellular Response to Dermacoccal and Staphylococcal Infection* (oral presentation)
- Julianna Elhoussan: *Psoriasis Drug Trial and Analysis of Gender, Race and Age* (poster)

April 2013

Assumption College Undergraduate Research Symposium. Worcester, MA  
Faculty mentor for student project:

- Britni Hagopian & Ally O'Malley: *Identification of an Unknown Bacterium using Genetic and Metabolic Assays* (poster)  
\*Winner of Poster Prize

April 2012

Assumption College Undergraduate Research Symposium, Worcester, MA  
Faculty mentor for student project:

- Stephanie J. Bouley: *The Role of Autophagy in BK Virus Infection of Host Cells* (poster)

## **RESEARCH STUDENTS AND THEIR ACCOMPLISHMENTS**

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### **Dugan Laboratory Research Students**

2018-2019

**Sydney Knoll '19**, Assumption College

- BIO490 & HON300/HON444 Honor Thesis Title: Analysis of bacteria from the common kitchen sponge
- Poster presentation at Pioneer Valley Microbe Symposium, Amherst, MA (January 2019)
- Poster presentation Assumption College Undergraduate Research Symposium (April 2019)
- Current position: Doctor of Nursing Practice program at the University of Massachusetts Medical School (Fall 2019-)

2018

**Nicholina Allain '19**, Assumption College

- BIO490 Research Project: Investigating carbon and nitrogen isotope ratios in

hair and meat samples

- Poster presentation at Pioneer Valley Microbe Symposium, Amherst, MA (January 2019)

2014-2015

**Lauren Pepi '15**, Assumption College

- Summer and BIO490 Research Project: Cell cycle inhibition influences BK virus infection
- Teaching Assistant for Bacteriology course, Summer@Brown program for high school students, Brown University (July 2015)
- Poster Presentation at Assumption College Undergraduate Research Symposium (April 2015)
- Oral Presentation at Assumption College Natural Sciences Seminar Series (Sept. 2014)
- Awarded Assumption College Natural Science Summer Undergraduate Research Funding (summer 2014)
- Graduate school: Ph.D. in Chemistry at the University of Georgia (2020)
- Current position: Postdoctoral Research Associate, Glycoproteomics, Athens, GA

Summer 2014

**Sarah Williams '14**, Assumption College

- Summer Research Project: The effect of Elafin on BK Virus infection
- Teaching Assistant for Bacteriology course, Summer@Brown program for high school students, Brown University (July 2014)
- Graduate school: Masters of Public Health Program at Boston University (2017)
- Current position: Project Manager, Patient Safety at Brigham and Women's Hospital, Boston, MA (2017-)

2013-2015

**Hieu Nguyen '15**, Assumption College

- HON300/HON444 Honor's Thesis Title: The effect of montamine analogs on *E.coli* and *S. aureus* growth
- Oral Presentation at Assumption College Undergraduate Research Symposium (April 2015)
- Awarded Assumption College Natural Science Summer Undergraduate Research Funding (summer 2014)
- Poster Presentation at Assumption College Undergraduate Research Symposium (April 2014)
- Poster Presentation at American Society for Microbiology: Region I Meeting, Storrs, CT (Oct. 2013)
- Oral Presentation at Assumption College Natural Sciences Seminar Series (Sept. 2013)
- Awarded Assumption College Honors Program Summer Research Fellowship (summer 2013)
- Pharm.D. at Massachusetts College of Pharmacy and Health Sciences, Worcester, MA (2019)

2013-2014

**Maggie Bara '14**, Assumption College

- Summer and BIO490 Research Project: Immune response to *Dermaococcus* Infection
- Oral Presentation at Assumption College Undergraduate Research Symposium (April 2014)
- Poster Presentation at American Society for Microbiology: Region I Meeting, Storrs, CT (Oct. 2013)

- Oral Presentation at Assumption College Natural Sciences Seminar Series (Sept. 2013)
- Teaching Assistant for Bacteriology course, Summer@Brown program for high school students, Brown University (July 2013)
- Awarded Assumption College Natural Science Summer Undergraduate Research Funding (summer 2013)
- Research Associate I at Broad Institute of Harvard and MIT (2014-2016)
- Current Position: Graduate student in Ph.D. program in Biology at the Duke University, Durham, NC (Fall 2016-)

Fall 2013

**Matt Cooke** '13, Assumption College

- BIO490 Research Project: Testing for enteroviruses in Blackstone Valley wastewater treatment center
- Oral Presentation at Assumption College Undergraduate Research Symposium (April 2013)
- Current position: Senior Manager in Business Development, Foundation Medicine, Somerville, MA (2016-present)

2011- 2012

**Stephanie Bouley** '12, Assumption College

- HON300/HON444 Honor's Thesis Title: Understanding the role of autophagy in BK Virus infection
- Awarded American Society for Microbiology Undergraduate Summer Fellowship \*39 of 69 applications were funded (summer 2011)
- Oral Presentation at Assumption College Natural Sciences Seminar Series (Sept. 2011) Poster Presentation, Posters on the Hill, Washington, DC (April 2012)
- Oral Presentation at Assumption College Undergraduate Research Symposium (April 2012)
- Travel Award, American Society for Microbiology, 112<sup>th</sup> General Meeting (June 2012)
- Outstanding Poster Award, American Society for Microbiology 112<sup>th</sup> General Meeting, San Francisco (June 2012)
- Fulbright Scholarship, University of Tübingen, Germany (2012-2013)
- Graduate school: Ph.D. in Experimental and Molecular Medicine at Dartmouth College, Hanover, NH (2013-2019)
- Current position: Postdoctoral Research Associate, Massachusetts General Hospital, Boston, MA (2019-present)

### **Faculty Mentor for Honors Students (HON300/HON444) Conducting Literature Reviews**

2021

**Rebecca Chioniere** '22, Assumption University

- HON300 Honor Thesis Proposal: Prion disease in animals and interspecies transmission

2021

**Lauren Jakobs** '22, Assumption University

- HON300 Honor Thesis Proposal: The Leaky Pipeline of Women in Biological Science

2020-2021

**Evan Kessinger** '21, Assumption University

- HON300/HON444 Honor Thesis Title: Investigating COVID-19 Disease

2020

**Nicole Bramlitt** '21, University

- HON300 Honors Thesis Proposal: Using RAW264.7 cells as a model for



bacterial phagocytosis

- 2017-2018      **Devon Joyce '19**, Assumption College
- HON300/HON444 Honor Thesis Title: Investigate opioid chemical structure and its prenatal and postnatal effects
  - Oral presentation Assumption College Undergraduate Research Symposium (April 2019)
  - Current position: Physician Assistant Program, Massachusetts College of Pharmacy and Health Sciences, Worcester, MA (2020-)
- 2014              **Shannon Martin '15**, Assumption College
- HON300/444 Honor Thesis Title: Location of EFHC1 protein in *Tetrahymena thermophiles* axonemes using Cryo-ET
  - Awarded American Cancer Society's Alvan T. and Viola D. Fuller Fellowship (summer 2015)
  - Oral presentation Assumption College Undergraduate Research Symposium (April 2015)
  - Oral Presentation at Assumption College Natural Sciences Seminar Series (Nov. 2014)
  - REU Summer Fellowship Program at Brandeis Material Research Science and Engineering Center, Waltham, MA (summer 2014)
  - Current position: Doctoral Candidate at Brown University, Pathobiology Graduate Program

**Faculty Mentor for Off-Campus Internships and Research Opportunities (INT300 and BIO490)**

- Fall 2020        **Kennedy O'Hara '21**, Assumption University
- INT300 Project: COVID-19 Contact Tracing, protocol development, and information sharing
  - Off campus internships at Ascendria and through Academic Health Collaborative, Worcester, MA – Contact Tracing Training
  -
- Fall 2016        **Marielena Layuno Matos '17**, Assumption College
- BIO490 Research Project: The Effect of probiotic bacteria on periodontal pathogens
  - Off-campus research internship at Oral Microbiology Laboratory, School of Biomedicine, University of São Paulo, São Paulo, Brazil
  - Current position: Dentistry student at University of Puerto Rico, PR
- Fall 2014        **Joe Douglas '15**, Assumption College
- INT300 Research Project: Evaluation of I-Stat hemocrit and hemoglobin tests: Improving clinical practice and outcomes
  - Off-campus research internship at Department of Pathology, Massachusetts General Hospital, Boston, MA
  - Poster Presentation at Assumption College Undergraduate Research Symposium (April 2015)
  - Oral Presentation at Assumption College Natural Sciences Seminar Series (Feb. 2015)
  - Current position: Medical student at the University of Massachusetts Medical School
- Fall 2013        **Julianne Elhoussan '14**, Assumption College
- INT300 Research Project: Research in Rheumatoid Arthritis

- Off-campus research internship at UMASS Advance Clinical Care Center
- Poster Presentation at Assumption College Undergraduate Research Symposium (April 2014)

### **Committee Member for Honor Theses**

2023	<b>Manuella Talla Takoukam</b> '23, Brown University
April 2022	<b>Zinab Eisa</b> '22, Brown University, Honors Thesis Title: The Kinetics of Inflammation and Immune Signaling in Acute Wound Healing
Dec. 2021	<b>Lauren Jakobs</b> '22, Assumption University, Honor Thesis Title: The Leaky Pipeline of Women in Biological Science
April 2020	<b>Samantha Tepper</b> '20, Assumption University, Honors Thesis title: The Characterization of Four Newly Discovered Halophilic Archaea Isolates
April 2019	<b>Cameron Young</b> '19, Assumption University, Honors Thesis title: The Role of Interferon- $\beta$ in the Treatment of Multiple Sclerosis
April 2019	<b>Adrienne Bertothy</b> '19, Assumption University, Honors Thesis title: Characterization of the Exocyst Protein Complex in Fission Yeast <i>S. pombe</i>
Feb. 2019	<b>Thomas Barringer</b> '19, Assumption University, Honors Thesis Title: Seasonal prevalence of <i>Batrachochytrium dendrobatidis</i> in Central Massachusetts <i>Lithobates catesbeianus</i> tadpoles
April 2016	<b>Anna Canavan</b> '15, Assumption University, Honors Thesis title: A Comparison of Infection Control between the Central African and West African Outbreaks of Ebola Virus
April 2016	<b>Ann-Marie Idusuyi</b> '16, Assumption University, Honors Thesis title: Community-associated Methicillin Resistance <i>Staphylococcus aureus</i> : Early indicators and preventative techniques for collegiate student athletes in the U.S.
Feb. 2015	<b>Elise Prayson</b> '15, Assumption University, Honors Thesis title: <i>Crabp1</i> regulates lipid accumulation in mammary gland fat cells
March 2015	<b>Kaitlin Poirier</b> '15, Assumption University, Honors Thesis title: <i>Cooking with Crohn's Disease- Microbiota in the Mix</i>
April 2013	<b>Jenna Garozzo</b> '13, Assumption University, Honors Thesis title: <i>Molecular mechanisms of axon guidance: A study of integrins and netrin-1</i>

### **UNIVERSITY SERVICE AND COMMITTEE WORK**

2022-2023	Search Committee member, Associate Dean for Medical Education, Program in Liberal Medical Education Brown University
2022	Committee Member, Committee for University Minors Protection Policy, Brown University

- Peer Teaching Observer, Biology Education, Brown University
- 2021 Sponsor, Bachelor of Science in Biology degree, Assumption University
- Facilitated faculty conversations, compiled feedback, and wrote the application for a new Bachelor's of Science in Biology degree program as previously we only offered a Bachelor's of Art in Biology
  - Wrote application for curricular changes to our Bachelor of Arts in Biology Program
- 2021 Journal Club Facilitator, Biological and Physical Science Department, Assumption University
- 2020 - 2021 Committee Member, Curriculum Committee for College of Liberal Arts and Science, Assumption University
- 2020 Committee Member, *Ad Hoc* Mission Committee for the College of Liberal Arts and Sciences, Assumption University
- 2019 - 2020 Co-Chair, Biology Program Review Committee, Assumption University
- 2019 - 2020 Co-organizer, Life Science Seminar Series, Assumption University  
Established this new interdisciplinary seminar series with colleagues in Nursing and Health Sciences with the goal of bringing dynamic researchers and health professionals to Assumption to share their expertise with our community
- 2019 - 2020 Committee Member, Continuing Education Committee, Assumption University
- 2019 - 2020 External Committee Member, Faculty Search for Health Sciences Position in Human Services and Rehabilitation Studies Department, Assumption University
- 2019 Bachelor of Arts / Bachelor of Science Committee, Member, Assumption University
- 2018 Committee Member, Faculty Search for Neuroscience Position in Biological and Physical Sciences Department, Assumption University \*Successful Search
- 2017 – 2018 Committee Chair, Nursing Committee, Assumption University
- This was a new committee tasked with assisting the development of a new Bachelor's of Science in Nursing (BSN) Program
  - Led the Search Committee for Dean of Nursing position \*Successful Search
  - Worked closely with Dean to develop Assumption's nursing curriculum
- 2017- 2019 Committee Chair, Admissions Committee, Assumption University  
Developed and implemented faculty recruitment initiative that:
- Identified 68 faculty volunteers and collected their academic interest and program affiliations for Office of Admissions
  - Organized and implemented initiative to have faculty volunteers email high school students accepted at Assumption college (collectively 3500 email sent in 2018)
  - Collected data from email initiative and assessed of effectiveness of the program
- 2017 - 2019 Faculty Senate Representative, Assumption College

2015 – 2016	Institutional Review Board (IRB) Committee, Assumption College
2014 - 2016	Committee Member, Undergraduate Symposium Committee, Assumption College
2013 - 2014	Committee Member, Faculty Search for Physics Position in Natural Sciences Department, Assumption College *Successful Search
2013 – 2016	Committee Member, Honors Program Council, Assumption College
2013 - 2016	Committee Member, Faculty Development Grant Committee, Assumption College
2013 – 2015	Organizer, Natural Science Departmental Seminar Series, Assumption College (5 semesters)
2012 - 2014	Committee Member, Undergraduate Symposium Committee, Assumption College
2011 - 2014	Committee Member, College Conduct Board Committee, Assumption College
2011 - 2012	Alternate Member, Curriculum Committee, Assumption College (attended all meetings)
2011 - 2012	Committee Member, Faculty Search for Anatomy Position in Natural Sciences Department, Assumption College *Successful Search

## **PROFESSIONAL SOCIETIES**

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2017 – 2019	International Society for Extracellular Vesicles – Senior member
2010 – present	Northeast Branch of American Society for Microbiology - Individual member
2008 – present	American Society for Microbiology – Contributing member
2004 - present	American Society for Virology - Associate member

## **COMMUNITY SERVICE**

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2019 – 2020	<b>Co-Organizer of STEM Nights for grades K-2 and 3-5</b> Lincoln Central Elementary School, Lincoln, RI
2019 – present	<b>Secretary, Board of Directors</b> Friends of Lincoln, RI Public Library