What is your science storyline?

How to write a stellar biosketch

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Words of wisdom…

- **Always, always, always** - read your funding opportunity announcement before you begin working on any section of your proposal
- For the biosketch, keep an eye out for key words you can incorporate into your personal statement

Remember: Grant writing is an art!

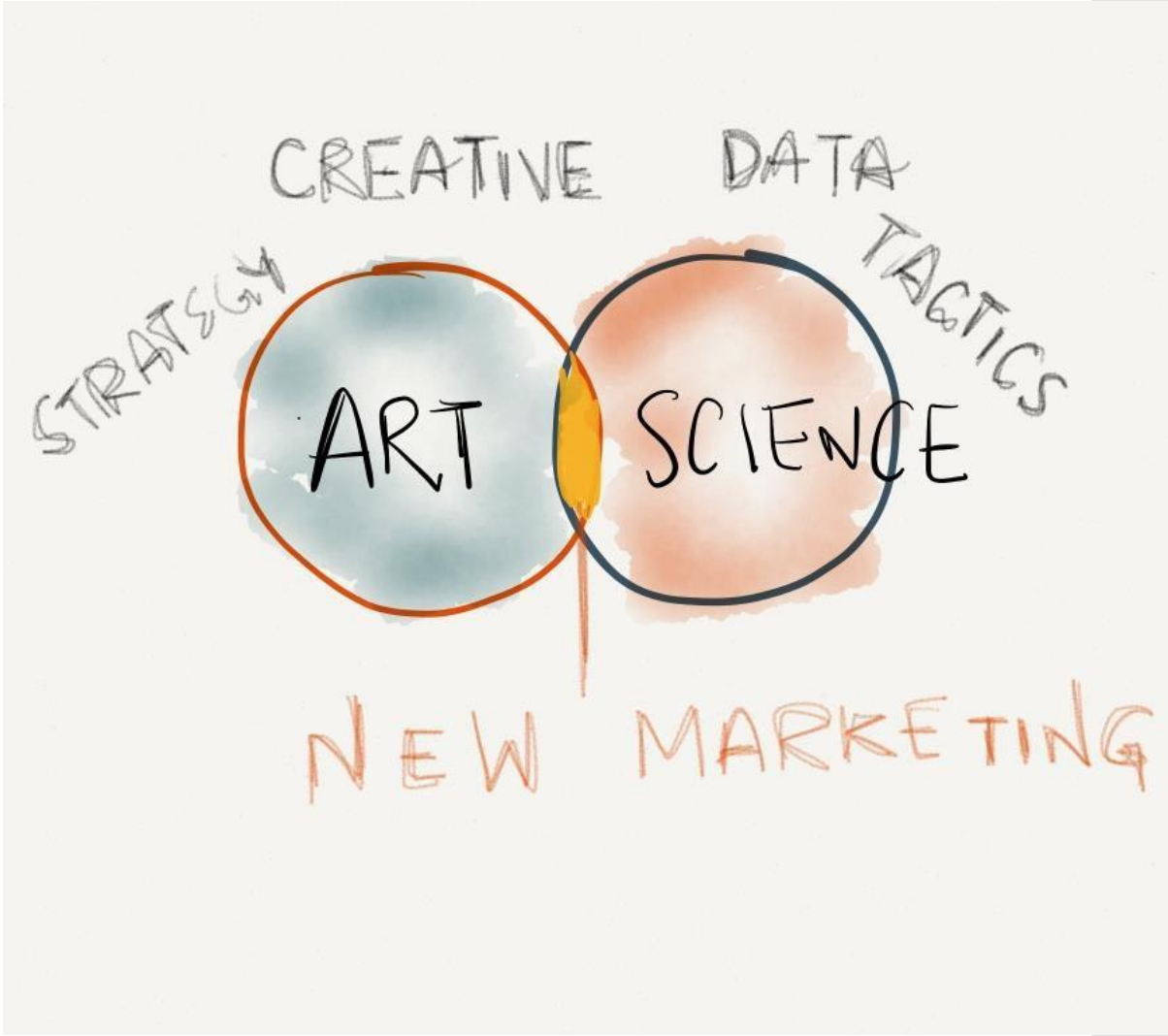
- **To be funded you need**

Science

- A strong conceptual framework and rigorous research strategy supporting your project
- To address a problem or critical barrier to progress in the field

Marketing

- Emphasize what is exciting about your proposal and your research team
- Use keywords in the funding opportunity announcement consistently to demonstrate that you, your team, and your project respond to what they are looking for
- Stress the significance of your findings



THE BIOSKETCH FORMAT HAS CHANGED!

- The biosketch format page was updated for application due on/after **January 25, 2022** (See NOT-OD-21-073 / NOT-OD-21-110 for specific changes and details)

- Before working on your biosketch please visit: https://grants.nih.gov/grants/forms/biosketch.htm
  - Updated forms
  - Instructions
  - Examples

- The biosketch format will depend on if you are applying for a fellowship grant or non-fellowship grant

Core Review Criteria

- Used by reviewers to score the INVESTIGATORS in the application
  - Used to highlight the qualifications of the research team for a specific role in the proposed project by describing how their background and expertise relates to their proposed project

- Reviewers will use the following core criteria to score this section:
  - Are the investigators well suited to the project?
  - Do early-stage investigators have the appropriate experience or training?
  - If an established investigator, do they have an ongoing record of accomplishments?
  - If the project is Multi-PD/PI or collaborative, do the investigators have complementary and integrated expertise? Is their leadership approach, governance, and organizational structure adequate?

Who Exactly are ‘Key Personnel’ and ‘OSC’s’?

Key personnel	Individuals who contribute to the scientific development or execution of a project in a substantive, measurable way, whether or not they receive salaries or compensation under the grant. Includes: the Principal Investigator, Co-Investigators
Other Significant Contributors (OSC)	Individuals who have committed to contribute to the scientific development or execution of the project but are NOT committing any specified measurable effort (i.e., person months) to a project. Examples: statistician who may be brought onto the project for a short period of time for a specific task

Frequently asked questions

- Who must complete a biosketch?
  - For grant applications, biosketches must be provided for Senior/Key Personnel and other significant contributors
  - For Research Performance Progress Reports (RPPRs), biosketches are only required for new Senior/Key Personnel for whom a biosketch has not yet been provided

- Do biosketches have a page limit?
  - There is a 5-page limit

Before you begin…

ALWAYS:

1. Tailor biosketches so that they maximally support you application
2. Try to use the same formatting (e.g., font size, reference structure) in all biosketches submitted
3. Ensure you are using the current biosketch page version

OMB No. 0925-0001 and 0925-0002 (Rev. 12/2020 Approved Through 02/28/2023)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME:

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE:

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY

A. Personal Statement

B. Positions, Scientific Appointments, and Honors

C. Contributions to Science

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Sections in the biosketch

Header (Name, eRA Commons, and position)

Education and training

A. Personal Statement

B. Positions, Scientific Appointments, and Honors

C. Contributions to Science

Header

OMB No. 0925-0001 and 0925-0002 (Rev. 12/2020 Approved Through 02/28/2023)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Hunt, Morgan Casey

eRA COMMONS USER NAME (credential, e.g., agency login): huntmc1

POSITION TITLE: Associate Professor of Psychology

- **What is eRA Commons?**
  - an online interface where signing officials, principal investigators, trainees and post-docs at institutions/organizations can access and share administrative information relating to research grants

- If you do not have an eRA commons username, speak to the officials at your sponsored programs office so that they can help you get one

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Education and training

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Puerto Rico Mayaguez Campus, Mayaguez, PR	B.S.	05/2001	Industrial Microbiology
Mount Sinai School of Biological Sciences, Post-Bacculareate Research Education Program, New York City, NY		08/2002	Virology and Gene Therapy
University of Puerto Rico Medical Sciences Campus, San Juan, PR	Ph.D.	05/2011	Molecular Parasitology
University of Puerto Rico Comprehensive Cancer Center, San Juan, PR	Post-doc	02/2018	Gastrointestinal Cancer Research

- Include fellowships, residencies, and internships in this table rather than only in Positions and Honors

Personal statement

- Briefly, in the first page, describe why you are well-suited for your role in the project. Include:
  - Aspects of your training and technical expertise, previous experimental work on this topic or related topics
  - Your collaborators or scientific environment, why your expertise is complementary to that of your research team
  - Specific contributions to science that are not included in Section C
  - Other relevant experience (e.g., experience in leading teams, among others)
  - If you wish to explain impediments to your past productivity, you may include a description of factors such as family care responsibilities, illness, disability, and military service
  - If you have published or created research products under another name
- You may cite up to four publications or research products that highlight your experience and qualifications for this project
  - Research products can include, but are not limited to, audio or video products; conference proceedings such as meeting abstracts, posters, or other presentations; patents; data and research materials; databases; educational aids or curricula; instruments or equipment; models; protocols; and software or netware

Remember:
Some Funding Opportunity Announcements may require additional information

NIH personal statement: General recommendations

Do's

- Do tell a story about you and your science
- Do cover all the bases in NIH instructions
- Do write in first person
- Do use clear lay-friendly language
- Do write enough to make your case (~300 words) and state role in proposal
- Do use keywords from your funding announcement and descriptive character words (e.g., driven, productive)
- Use specific examples and names (if important for the proposal), and concrete details
- Explain gaps in productivity
- Proofread and edit as needed

Don't

- Don’t undersell yourself by reducing your story to bullet points and links
- Don’t re-use older, untailored biosketches
- Don’t write in the third person
- Don’t overuse technical jargon
- Don’t’ under or over explain
- Don’t use cliché frases and vague language
- Don’t namedrop if the person is not important to your proposal
- Don’t overexplain of apologize for gaps in productivity
- Don’t send in an unrevised version
- Don’t include graphics, figures, hyperlinks and URLs, and tables as they are not allowed

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Personal statement

- Since the Research support section has been eliminated, you can include ongoing and recently completed projects that you would like to highlight

A. Personal Statement

I am an Associate Professor of Psychology, and my research is focused on neuropsychological changes associated with substance use disorders. I have a broad background in psychology, with specific training and expertise in ethnographic and survey research and secondary data analysis on psychological aspects of substance use disorders. As PI or co-Investigator on several university- and NIH-funded grants, I laid the groundwork for the proposed research by developing effective measures of disability, depression, and other psychosocial factors relevant to older people with substance use disorders, and by establishing strong ties with community providers that will make it possible to recruit and track participants over time as documented in the following publications. In addition, I successfully administered the projects (e.g. staffing, research protections, budget), collaborated with other researchers, and produced several peer-reviewed publications from each project. As a result of these previous experiences, I am aware of the importance of frequent communication among project members and of constructing a realistic research plan, timeline, and budget. The current application builds logically on my prior work. During 2015-2016, my career was disrupted due to family obligations. However, upon returning to the field, I immediately resumed my research projects and collaborations and successfully competed for NIH support. In summary, I have the expertise, leadership, training, expertise, and motivation necessary to successfully carry out the proposed research project.

Ongoing and recently completed projects that I would like to highlight include:

R01 DA942367
Hunt (PI)
09/01/16-08/31/21
Health trajectories and behavioral interventions among older people with substance use disorders

R01 MH922731
Merryle (PI), Role: co-investigator
12/15/17-11/30/22
Physical disability, depression, and substance use among older adults

R21 AA998075
Hunt (PI)
01/01/19-12/31/21
Community-based intervention for alcohol abuse

Citations:

1. Merryle, R.J. & **Hunt, M.C.** (2015). Independent living, physical disability and substance use among older adults. Psychology and Aging, 23(4), 10-22.
2. **Hunt, M.C.**, Jensen, J.L. & Crenshaw, W. (2018). Substance use and mental health among community-dwelling older adults. International Journal of Geriatric Psychiatry, 24(9), 1124-1135.
3. **Hunt, M.C.**, Wiechelt, S.A. & Merryle, R. (2019). Predicting the substance use treatment needs of an aging population. American Journal of Public Health, 45(2), 236-245. PMCID: PMC9162292
4. Merryle, R. & **Hunt, M.C.** (2020). Randomized clinical trial of cotinine in older people with nicotine use disorder. Age and Aging, 38(2), 9-23. PMCID: PMC9002364

Personal statement example

A. Personal Statement

My expertise in microbiology, molecular biology, and gastrointestinal cancer biology have been developed and strengthened through the academic and experimental experiences acquired during my undergraduate, post-baccalaureate, graduate, and postdoctoral training. I was formally trained as a Microbiologist at the University of Puerto Rico Medical Sciences Campus, and subsequently pursued postdoctoral training in Gastrointestinal Oncology at the University of Puerto Rico Comprehensive Cancer Center (UPRCCC). Currently, I am an Assistant Investigator in Gastrointestinal Oncology and leader of the Human Tissue Engineering Lab (HTEL) at the UPRCCC, the first Hispanic organoid biobank in the Caribbean. My research is focused on microorganism-driven carcinogenesis and the etiology gastrointestinal cancer health disparities. I am also a Co-Principal Investigator of the population-based Puerto Rico Familial Colorectal Cancer Registry (PURIFICAR) and its biorepository, which currently has collected more than 3,000 gastrointestinal biospecimens from Puerto Rican Hispanics, a minority population with a high burden of gastrointestinal malignancies and health disparities that is under-represented in scientific research studies. For the present proposal, PURIFICAR will provide plasma and organoid samples to complete the proposed experiments in Aim 1 and Aim 3 of the present study.

Dr. Abel Baerga and I have maintained a productive collaboration for almost five years. Our complementary expertise, in combination with my access to the PURIFICAR biorepository and experience with colorectal organoid models, makes me uniquely suited to serve as a co-investigator in the present study.

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Personal statement example

Ongoing and recently completed projects that I would like to highlight include:

NCI
K22 CA226395
Gonzalez-Pons (PI)
07/01/2018-6/30/2021
Project title: Host genetic susceptibility to gut microbiota-driven colorectal carcinogenesis
Major Goal: To determine if single nucleotide polymorphisms in the promoter region of key cytokine genes promote a pro-inflammatory phenotype that enriches a subset of the gut microbiota that produces toxins, thereby conferring higher risk of colorectal neoplasia. To establish enteroid models with the SNPs in key cytokines to examine how gut bacterial toxins contribute to colorectal carcinogenesis.
Role: PI

NIMHD
RCMI Pilot
Gonzalez-Pons (PI)
09/01/2020-08/31/2022
Project title: Interplay between gut bacteria and metabolites in the development of colorectal adenomas
Major Goal: To characterize the gut microbiota composition and its associated metabolome in a cohort of Puerto Rican Hispanics, a population with noted CRC health disparities, and to examine if specific bacterial taxa and their metabolites are associated with increased risk for colorectal adenomas, CRC precursor lesions.
Role: PI

UPR
COVID-19 Institutional Research Funding
Cruz-Correa (PI)
09/01/2020-08/31/2021
Project title: Host genetic susceptibility to COVID-19 and pandemic-associated stressors
Major Goal: To examine if pro-inflammatory genotypes are associated with more severe COVID-19 disease, and an exacerbated response to pandemic-associated stressors in terms of stress/anxiety levels and changes to the gut microbiome.
Role: Co-investigator

Citations:

a. **Gonzalez-Pons M**, Cruz-Correa M. (2020) Colorectal Cancer Disparities in Latinos: Genes vs. Environment. In: Ramirez A., Trapido E. (eds) Advancing the Science of Cancer in Latinos. Springer, Cham. https://doi.org/10.1007/978-3-030-29286-73
b. Cruz-Correa M, **Gonzalez-Pons M**. Reassessing colectomy in young patients with familial adenomatous polyposis. Gastrointest Endosc 2018. 88(4);734-736. PMID: 30217246
c. Marqués-Lespier JM, **Gonzalez-Pons M**, Cruz-Correa M. Current Perspectives on Gastric Cancer. Gastroenterol Clin North Am 2016. 45(3);413-28. PMID: 27546840, PMCID: PMC4993977
d. **Gonzalez-**Pons M and Cruz-Correa M. Colorectal Cancer Biomarkers: Where are we now? Biomed Res Int 2015. 2015;149014. PMID: 26106599, PMCID: PMC4461726

Positions, Scientific Appointments, and Honors

- This section can be subdivided into “Positions and Scientific Appointments” and “Honors”
  - List in reverse chronological order all positions and scientific appointments both domestic and foreign
    - Include titled academic, professional, or institutional appointments whether or not remuneration is received, and whether full-time, part-time, or voluntary (including adjunct, visiting, or honorary)
  - List any relevant academic and professional achievements and honors. In particular:
    - Students, postdocs, and junior faculty should include scholarships, traineeships, fellowships, and development awards
    - Clinicians should include information on any clinical licensures and specialty board certifications

Positions, Scientific Appointments, and Honors: Examples

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2021– Present	Associate Professor, Department of Psychology, Washington University, St. Louis, MO
2020 – Present	Adjunct Professor, McGill University Department of Psychology, Montreal, Quebec, Canada
2018 – Present	NIH Risk, Adult Substance Use Disorder Study Section, member
2015 – 2017	Consultant, Coastal Psychological Services, San Francisco, CA
2014 – 2021	Assistant Professor, Department of Psychology, Washington University, St. Louis, MO
2014 – 2015	NIH Peer Review Committee: Psychobiology of Aging, ad hoc reviewer
2014 – Present	Board of Advisors, Senior Services of Eastern Missouri
2013 – 2014	Lecturer, Department of Psychology, Middlebury College, Middlebury, VT
2011 – Present	Associate Editor, Psychology and Aging
2009 – Present	Member, American Geriatrics Society
2009 – Present	Member, Gerontological Society of America
2009 – 2013	Fellow, Intramural Research Program, National Institute on Drug Abuse, Baltimore, MD
2006 – Present	Member, American Psychological Association

Honors

2020	Award for Best in Interdisciplinary Ethnography, International Ethnographic Society
2019	Excellence in Teaching, Washington University, St. Louis, MO
2018	Outstanding Young Faculty Award, Washington University, St. Louis, MO

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Positions, Scientific Appointments, and Honors: Examples

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2011- 2018 Postdoctoral research fellow, University of Puerto Rico Comprehensive Cancer Center, San Juan, PR

2017- present Scientific editor, Puerto Rico Clinical and Translational Research Consortium, San Juan, PR

2018- present Assistant Investigator, University of Puerto Rico Comprehensive Cancer Center, San Juan, PR

Honors

2009	Selected to give a short talk in the Keystone Symposia: Drug discovery for protozoan parasites
2009	Selected to give a short talk in the Society of Microbiology of Puerto Rico semiannual convention
2010	Recipient of the Deanship of Biomedical Sciences award for excellence in research
2010	Selected to assist to the UPR-MDACC Bioinformatics and Genetic Epidemiology Conference
2011	Selected to attend the ASM Scientific Writing and Publishing Institute
2011	Recipient of the Deanship of Biomedical Sciences award for excellence in research
2011	Selected to be on the Dean's list
2012	Recipient of the AACR Minorities in Cancer Research travel award to assist to the AACR special conference on Noncoding RNAs and Cancer
2013	Recipient of the AACR Minorities in Cancer Research travel award to assist to the AACR Annual Meeting
2015	Selected to participate in the Future Research Leaders Conference sponsored by the NIH Chief Officer for Scientific Workforce Diversity
2021	Selected to Participate in NCI Awardee Skills Development Consortium (NASDC) Advanced Course on Mentorship, Leadership, and Research on Cancer-Related Health Disparities
2021	Selected to Participate in NCI Awardee Skills Development Consortium (NASDC) Immuno-Oncology for the Translational Researcher Short Course
2021	Received Best Oral Presentation Award at the 2021 Southeast Regional IDeA Conference

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Contributions to Science

- All senior/key persons should complete the "Contributions to Science" section except candidates for research supplements to promote diversity in health-related research who are high school students, undergraduates, and post-baccalaureates

- Briefly describe up to 5 of your most significant contributions to science
  - The description of each contribution should be no longer than one half page and may include up to 4 citations or research products
    - For each, indicate the following:
      - the historical background that frames the scientific problem;
      - the central finding(s);
      - the influence of the finding(s) on the progress of science or the application of those finding(s) to health or technology; and
      - your specific role in the described work

Contributions to Science

- Before you work on your contributions to science, it is recommended that you create a full digital listing of your publications in NCBI “My Bibliography section”
  - You may include this link at the end of this section

- Remember, this subsection of the biosketch is one of the core criteria reviewers will use to score the INVESTIGATORS

C. Contributions to Science

1. My early publications directly addressed the fact that substance use is often overlooked in older adults. However, because many older adults were raised during an era of increased drug and alcohol use, there are reasons to believe that this will become an increasing issue as the population ages. These publications found that older adults appear in a variety of primary care settings or seek mental health providers to deal with emerging concerns about a substance use disorder. These publications document this emerging concern and guide primary care providers and geriatric mental health providers to recognize symptoms, assess the nature of the behavior, and apply the necessary interventions. By providing evidence and simple clinical approaches, this body of work has changed the standards of care for older adults with substance use disorders and will continue to provide assistance in relevant medical settings well into the future. I served as the primary investigator or co-investigator in all of these studies.
   a. Gryczynski, J., Shaft, B.M., Merryle, R., & **Hunt, M.C.** (2013). Community based participatory research with late-life substance use disorder. American Journal of Alcohol and Drug Abuse, 15(3),
   b. Shaft, B.M., **Hunt, M.C.**, Merryle, R., & Venturi, R. (2014). Policy implications of genetic transmission of alcohol and drug use in women who do not use drugs. International Journal of Drug Policy, 30(5), 46-58.
   c. **Hunt, M.C.**, Marks, A.E., Shaft, B.M., Merryle, R., & Jensen, J.L. (2015). Early-life family and community characteristics and late-life substance use. Journal of Applied Gerontology, 28(2),26-37.
   d. **Hunt, M.C.**, Marks, A.E., Venturi, R., Crenshaw, W. & Ratonian, A. (2018). Community-based intervention strategies for reducing alcohol and drug use in older adults. Addiction, 104(9), 1436-1606. PMCID: PMC9000292

2. In addition to the contributions described above, with a team of collaborators, I directly documented the effectiveness of various intervention models for older people with substance use disorders and demonstrated the importance of social support networks. These studies emphasized contextual factors in the etiology and maintenance of substance use disorders and the disruptive potential of networks in substance use treatment. This body of work also discusses the prevalence of alcohol and amphetamine use in older adults and how networking approaches can be used to mitigate the effects of these disorders.
   a. **Hunt, M.C.**, Merryle, R. & Jensen, J.L. (2015). The effect of social support networks on morbidity among older adults with substance use disorders. Journal of the American Geriatrics Society, 57(4), 15-23.
   b. **Hunt, M.C.**, Pour, B., Marks, A.E., Merryle, R. & Jensen, J.L. (2018). Aging out of methadone treatment. American Journal of Alcohol and Drug Abuse, 15(6), 134-149.
   c. Merryle, R. & **Hunt, M.C.** (2020). Randomized clinical trial of cotinine in older people with nicotine use disorders. Age and Ageing, 38(2), 9-23. PMCID: PMC9002364

Complete List of Published Work in MyBibliography:
https://www.ncbi.nlm.nih.gov/myncbi/1ICifFFV4VYQZE/bibliography/public/

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Contributions to Science: Example

A. Contribution to Science

1. The SLAM family regulates colitis through both adaptive and innate immune mechanisms. Upon joining the Terhorst laboratory in 2001, the SLAM family of immune receptors was known to be relevant to lymphoproliferative syndromes however precise mechanisms of immunoregulation were unknown. As part of this collaborative team, we defined the role for SLAM, CD48, and Ly108 in T cell and innate immune cellular function in colitis. As SLAM is a measles virus receptor, the major impact of our work on SLAM as a regulator of phagosome function is on the field of virology and retargeting of measles virus.

a. Wang, N. Satoskar, A., Faubion, W.A., Howie, D., Okamoto, S., Feske, S., Gullo, C., Clark, K., Sosa, M.R., Sharpe, A.H., Terhorst, C. (2004). The cell surface receptor SLAM controls T cell and macrophage functions. The Journal of Experimental Medicine, 199(9):1255-64. PMCID:PMC2211908.

b. Howie, D., Laroux, F.S., Morra, M., Satoskar, A.R., Rosas, L.E., Faubion, W.A., Julien, A., Rietdijk, S., Coyle, A.J., Fraser, C., Terhorst, C. (2005). Cutting edge: the SLAM family receptor Ly108 controls T cell and neutrophil functions. Journal of Immunology, 174(10):5931-5. PMID:15879084.

c. Abadia-Molina, A.C., Ji, H., Faubion, W.A., Julien, A., Latchman, Y., Yagita, H., Sharpe, A., Bhan, A.K., Terhorst, C. (2006). CD48 controls T-cell and antigen-presenting cell functions in experimental colitis. Gastroenterology, 130(2):424-34. PMID:16472597.

d. Berger, S.B., Romero, X., Ma, C., Wang, G., Faubion, W.A., Liao, G., Compeer, E., Keszei, M., Rameh, L., Wang, N., Boes, M., Regueiro, J.R., Reinecker, H.C., Terhorst, C. (2010). SLAM is a microbial sensor that regulates bacterial phagosome functions in macrophages. NatureImmunology, 11(10):920-7. PMCID: PMC3338319.

A full list of research-related published work can be found at: http://www.ncbi.nlm.nih.gov/sites/myncbi/william.faubion.1/bibliography/40757558/public/?sort=date&direction= ascending

- Figures, tables, or graphics are not allowed
- Although you may mention of research products under development, such as manuscripts that have not yet been accepted for publication, you may only cite published papers.
- INCLUDE PMCID numbers for all citations

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Contributions to Science: Example

3. Microorganism-driven gastrointestinal carcinogenesis.
Microorganisms, including virus and bacteria, have been implicated in gastrointestinal carcinogenesis. *Helicobacter pylori* infections are a major risk factor for gastric cancer (GC). *H. pylori*-induced gastritis progresses a neoplastic lesion that in many cases becomes an adenocarcinoma. Although the incidence of gastric cancer is Puerto Rico is not high, it is one of the top ten leading causes of cancer death in the island. Numerous studies report an association between Human papillomavirus (HPV) infections and colorectal cancer, the leading cause of cancer death in both men and women in Puerto Rico. However, the mechanisms by which HPV putatively contributes colorectal carcinogenesis have yet to be fully understood. Accumulating evidence also support that the gut microbiota contributes to colorectal carcinogenesis. Most studies have focused on bacterial community profiling; however, my research examines the role functional effectors in the colorectal carcinogenic process. I am currently in the process of drafting a manuscript reporting an association between the presence of gut bacteria toxin genes in stool and a higher risk of colorectal neoplasia. These findings are the basis of the current application. My research has contributed to a better understanding of the prevalence and higher risk associated with these infections and the development of gastrointestinal cancers in Puerto Rican Hispanics.

a. **Gonzalez-Pons M**, Soto-Salgado M, Sevilla J, Suarez E, Perez CM, Marquez-Lespier JM, Cruz-Correa M. Seroprevalence and factors associated to *H. pylori* infection in Puerto Rico. Helicobacter 2018. 23(1). PMID: 29210527, PMCID: PMC5814898.
b. Bernabe-Dones RD, **Gonzalez-Pons M**, Villar-Prados A, Lacourt-Ventura M, Rodríguez-Arroyo H, Fonseca-Williams S, Velazquez FE, Diaz-Algorri Y, Lopez-Diaz SM, Rodríguez N, Yamamura Y, Cruz-Correa M. High Prevalence of Human Papillomavirus in Colorectal Cancer in Hispanics: A Case-Control Study. Gastroenterol Res Pract 2016. 2016;7896716. PMID: 26904111, PMCID: PMC4745930.
c. Gómez-Moreno R*, **González-Pons M***, Soto-Salgado M, Cruz-Correa M, Baerga-Ortiz A. The Presence of Gut Microbial Genes Encoding Bacterial Genotoxins or Pro-Inflammatory Factors in Stool Samples from Individuals with Colorectal Neoplasia. Diseases 2019. Feb 1;7(1). pii: E16. PMID: 30717148. PMCID: PMC6473706.
    - *First co-authors

Contributions to Science: pre-doctoral

C. Contributions to Science

2. **High School Research:** I spent two summers doing research in the laboratory of Dr. Indira Creative at University of Hawaii, funded by a NIH Diversity Supplement award. Dr. Creative has developed several new anti-fungal drugs that might protect against skin infections. Over the course of two summers I set up in vitro cultures of skin cell lines and conducted a wide range of toxicity assays. We were excited to find that one of the new agents showed almost no toxicity, even at fairly high doses. Dr. Creative is now testing the drug in animals exposed to different types of fungal infections, including *Candida albicans*.
    1. Footman B, Eisser JK, **Simmons-Gonzales, L**, Creative IM. Testing XXH for toxicity in vitro. University of Hawaii Research Symposium; 2012 May; Manoa, HI.
3. **Undergraduate Research:** I was part of a project in the laboratory of Dr. Daniel Richardson at Purdue University. Dr. Richardson's laboratory studies the mechanisms of action of small molecules for cancer treatment. During my time in his lab I was looking at how a new small molecule, Gen Y, is able to target cancerous cells. My contributions to this work were included in a publication recently accepted in Cellular and Molecular Biology. The work was particularly exciting because it looks like the mechanism of action of Gen Y might be completely novel, making it a potential candidate for treating patients afflicted with colon cancer. Dr. Richardson was recently awarded a patent for this new drug.
    1. Nieman PY, **Simmons-Gonzales L**, Richardson, D. Gen Y: a novel small molecule with cytotoxic abilities targeting colon cancer cells. Cellular and Molecular Biology. 2018 June. 7(20):13672-78.
    2. **Simmons-Gonzales, L**, Richardson, D. Testing the ability of a small molecule, Gen Y, to target colon cancer cells. Advances in Cancer Research and Therapy; 2019 September; Denver, CO.
4. **Graduate Research**: My ongoing predoctoral research is focused on transcriptional gene regulation and signaling impacting motility of cancer cells. I believe the results from my research will likely be highly relevant to human health as they will provide new details into the workings of complex biological systems, which will allow for further extrapolations into the development of several types of cancer and their progression. I am currently developing a novel protocol for the identification of transcription complexes involved in cancer signaling pathways, which I hope to submit as a first author publication in the next few months.
    1. **Simmons-Gonzales, L**, Green, N. A tandem identification approach for transcriptional complexes involved in the signaling and motility of cancerous cells. Genetics and Molecular Biology Virtual Meeting; 2020 September

Include high school, undergraduate and graduate research

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Contributions to Science: postdoctoral-doctoral

C. Contributions to Science

1. **Early Career:** My early career contributions were focused on applying my knowledge of structural engineering to improving the design and integrity of tensile structures. More specifically, I worked with a team of engineers at the IBeam Group to develop concrete with a higher tensile strength that could be utilized in large structures such as suspension bridges. My particular role in the project was to identify candidate polymers, determine the ultimate tensile strength of these polymers, and make recommendations as to which polymer would afford concrete the most structural integrity under various stresses.
    a. **Hayes S**, Janessa AJ. Redesigning the Golden Gate bridge. National Undergraduate Symposium on Science and Engineering; 2011; Baltimore, MD.
    b. Lorentson C, **Hayes S**, Sauer N, Mehta S. Use of high-tensile concrete in cantilevered structures. J Applied Engineering. 2012; 63:413.
2. **Graduate Career:** My graduate research contributions focused on transcriptional gene regulation in Saccharomyces cerevisiae. Results from my research were highly relevant as they provided new details into the workings of complex biological systems and allowed for further extrapolations into the development of certain diseases and their progression. I originally developed a novel protocol for the purification of components of large protein complexes. A subsequent publication, in which I isolated and characterized a long sought-after transcription complex, challenged a key paradigm of transcription elongation and was a featured article in a major journal.
    a. **Hayes S**, Schneider K, Chen M, Auguri T. Rapid isolation and characterization of the most novel transcription complex in Saccharomyces cerevisiae and its role in transcription elongation. CSHL Meeting on Mechanisms of Eukaryotic Transcription; 2015 August; Cold Spring Harbor, NY.
    b. **Hayes S**, Schneider K, Chen M, Auguri T. Rapid isolation and characterization of a novel transcription complex in Saccharomyces cerevisiae and its role in transcription elongation. Journal of Cell Biology. 2016; 128:770.
    c. **Hayes S**, Auguri T. A tandem affinity purification tag approach allows for isolation of interacting proteins in Saccharomyces cerevisiae. Yeast Genetics and Molecular Biology Meeting; 2017 September; Seattle, WA.
    d. **Hayes S**, Auguri T. A tandem affinity purification tag approach allows for isolation of interacting proteins in Saccharomyces cerevisiae. Proceedings of the National Academy of Sciences of the United States of America. 2019; 98:151.
3. **Postdoctoral Career:** As a postdoctoral fellow, my research has provided a compelling link between mutations arising in stress response proteins and the development of various autoimmune diseases in humans. Previous studies have shown dysregulation in the innate immune response lead to autoimmune diseases in humans. A few Rtc homologues have now been identified in humans and appear to play a role in the regulation of genes in the innate immune response. My research is focused on the transcriptional regulator Rtc from Drosophila melanogaster.
    a. **Hayes S**, Yager LN, Murray GC. Rtc is an essential component of the Drosophila innate immune response. Genetics. 2019; 145:884.
    b. Yao M, Dionne CF, **Hayes S**, Murray GC. Up-regulation of Drosophila innate immunity genes in response to stress. Science. 2020; 304:1754.
    c. **Hayes S**, Murray GC. Stress, flies, and videotape: the Drosophila stress response. Annual review of physiology. 2020; 346:223.
    d. **Hayes S**, Cescaloo Q, Murray GC. Structural analysis of Drosophila Rtc. Nature. Forthcoming 2021.

Complete List of Published Work in My Bibliography:
https://www.ncbi.nlm.nih.gov/myncbi/1VgYzYESn3Nke9/bibliography/public/

Divide into early career, graduate career, and postdoctoral career

The Alliance
Hispanic Alliance for Clinical & Translational Research

Scholastic performance: pre- and postdoctoral for fellowship applications

D. Scholastic Performance

YEAR	COURSE TITLE	GRADE
	PURDUE UNIVERSITY	
2014	Introductory Biology	A
2014	Introductory Biology Lab	A
2014	Foundations of Chemical Principles	A
2014	French and Francophone World	A
2014	Ethics, Religion, and Culture Today	A
2015	Organismal and Population Biology	B
2015	Omics	B
2015	First Year Seminar: Nation and Migration	A
2015	Statistics, Probability, and Reliability	A
2015	Calculus I	B
2015	General Physics I	B
2015	Introductory Chemistry	A
2015	Population & Ecol Genetics	A
2015	Organic Chemistry	B
2016	American Literature	B
2016	General Physics II	B
2016	Organic Chemistry II	B
2016	Microbial Pathogenesis and the Immune Response	A
2016	Introduction to Cognitive Science	A
2016	Self Defense	P
2016	Biological Chemistry	B
2017	Anthropology of Childhood and the Family	A
2017	Disease, Culture, and Society in the Modern World	A
2017	Intro to Psychology	A
2017	Health & Fitness Walking	P
2017	State & Local Govt	A
2017	Human Genetic20	A
2017	Senior Project	A
2017	Bioinformatics	B
2018	Cell Biology	A
2018	Quantitative Analysis	B
2018	Quantitative Analysis Lab	A
2018	Physics in Modern Medicine	A
2018	Ethical Principles in Law and Economics	B
2018	Bowling	P
2018	Genomics and Systems Biology	A
2018	Senior Project	A
	UC SAN DIEGO	
2018	Seminar in Genetics	P
2018	Statistics for the Life Sciences	P
2018	Ethics in Biological Research	CRE
2019	Seminar in Physiology and Behavior	P
2019	Cancer Immunology	P
2020	Mechanisms of Cell Motility	P

D. Scholastic Performance

YEAR	COURSE TITLE	GRADE
	GEORGETOWN UNIVERSITY	
2013	Seminar in Molecular Biology	P
2013	Basic Biomedical & Biological Sciences	P
2014	Model Systems	P
2014	Statistics for the Life Sciences	P
2014	Current Topics in Molecular Genetics	P
2015	Ethics in Biological Research	CRE
2015	Biochemistry	P
2015	Physiology	P
2016	Seminar in Systems Biology	P
2016	Protein Chemistry	P

Except for the scientific ethics course, Georgetown University graduate courses are graded P (pass) or F (fail). Passing is C plus or better. The scientific ethics course is graded CRE (credit) or NC (no credit). Students must attend at least seven of the eight presentation/discussion sessions for credit.