# DANIELA FERA

Assistant Professor
Department of Chemistry and Biochemistry

Swarthmore College, 500 College Ave
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Education

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| 11/12 –07/17 09/06 – 08/1209/01– 05/05 | **Boston Children’s Hospital / Harvard Medical School, Boston, MA,** Postdoctoral Research Fellow, Laboratory of Stephen C. Harrison.Investigated the interplay between in the immune response and virus evolution in donors or animals infected with or vaccinated against HIV.**University of Pennsylvania**, Graduate School of Arts and Science, Philadelphia, PA Ph.D. in Biological Chemistry, 06/12 Dissertation Title: "Identification and Characterization of Small Molecule Antagonists of Human Papillomavirus Oncoproteins"**New York University**, College of Arts and Science, New York, NY B.A. in Chemistry, with Honors; B.A. in Mathematics, 05/05; cum laude  |

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| Month/Year(s) | Title | Specialty/Discipline(Lab PI for postdoctoral research) | Institution |

Faculty Academic Appointments:

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| Month/Year(s) | Academic Title | Department | Academic Institution |

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| 07/18 - Present08/17 - Present09/16 – 12/16,09/15 – 12/15 09/14 – 05/1509/14 – 12/14  | **Adjunct Assistant Professor of Biochemistry,** Department of Biochemistry and Molecular Biophysics, University of Pennsylvania, Philadelphia, PA**Assistant Professor of Biochemistry,** Department of Chemistry and Biochemistry, Swarthmore College, Swarthmore, PA**Adjunct Professor of Chemistry,** School of Arts and Sciences, Massachusetts College of Pharmacy and Health Sciences, Boston, MA**Adjunct Faculty,**Department of Chemistry and Physics, Emmanuel College, Boston, MAAdjunct Faculty,Department of the Sciences, Wentworth Institute of Technology, Boston, MA |

Research Experience:

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| 11/12 –07/17 | Postdoctoral Research Fellow, Department of Molecular Medicine, **Boston Children’s** **Hospital / Harvard Medical School** , Laboratory of Dr.Stephen C. Harrison, Ph.D. * Investigated the interplay between broadly neutralizing antibody (bnAb) development

and virus evolution in donors infected with HIV using X-ray crystallography, electron microscopy, and biochemical methods, in conjunction with data from collaborators.* Probed the immune response to immunization in non-human primates and in human

clinical trials using similar approaches as above. * Contributed an understanding of developmental pathways and envelope-antibody interactions for two HIV envelope epitopes (the CD4 binding site and V3-loop base

glycans) to guide immunogen design.  |

05/07 – 10/12 **Graduate Research Assistant**, Department of Chemistry, The Wistar Institute, University of Pennsylvania, Laboratory of Dr. Ronen Marmorstein

* Analyzed interactions between host proteins, such as the retinoblastoma protein pRb and the transcription factor p300, and viral oncoproteins using biochemistry and other biophysical techniques.
* Designed and performed high throughput screens, *in vitro* assays, cell-based assays, and collaborative *in vivo* studies to identify and characterize small molecule inhibitors against the human papillomavirus (HPV) E6 and E7 oncoproteins.
* Demonstrated that inhibitors can disrupt critical host-viral protein complexes, prevent degradation of tumor suppressor, induce apoptosis in HPV-positive cells, and reduce HPV-induced tumors in mice.

06/02 – 05/05**Undergraduate Research Assistant,** Department of Chemistry, College of Arts and Science, New York University, Laboratory of Dr. Tamar Schlick

* Wrote computer codes and used bioinformatics to analyze RNA sequences and secondary structures from a variety of genomes to try to correlate structure to function.
* Aided in the development of an RNA secondary structure database to catalogue different RNA secondary structures found in nature.
* Utilized Matlab and methods of graph theory to mathematically quantify and organize RNA secondary structures for placement in the RNA database.

Awards and Honors:

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| Year | Name of Honor/Prize | Awarding Organization | Achievement for which awarded (if unclear from award title) |

07/18 Scientific Teaching Fellow, 2018 Summer Institute on Scientific Teaching, led by

 Yale Center for Teaching & Learning

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| 08/1702/1709/1509/1505/1204/0704/0705/0509/02 – 05/05 | Kiehl’s LifeRide for amfAR Grant RecipientTravel Award, Boston Children’s Hospital Postdoctoral AssociationPostdoctoral Award, CHAVI-ID Annual RetreatPoster Prize, CHAVI-ID Annual RetreatSecond Place Poster Prize, Wistar Institute Cancer RetreatPenn Prize for Excellence in Teaching by Graduate Students Chemistry Department Teaching Award Merck AwardCollege of Arts and Science Presidential Scholar |

**Publications** (Swarthmore College undergraduate researchers underlined)**:**

1. Zhou, J.O., Ton, T., Morriss, J.W., Nguyen, D., **Fera, D.**,  (2018) Structural Insights from HIV-Antibody Co-Evolution and Related Immunization Studies. *AIDS Research and Human Retroviruses*. 34(9):760-768. doi: 10.1089/AID.2018.0097.
2. **Fera, D.**, Lee, M.S., Wiehe, K., Meyerhoff, R.R., Piai, A., Bonsignori, M., Aussedat, B., Walkowicz, W.E., Ton, T., Zhou, J.O., Danishefsky, S., Haynes, B.F., and Harrison, S.C. (2018) HIV Envelope V3 Region Mimic Embodies Key Features of a Broadly Neutralizing Antibody Lineage Epitope.*Nat Commun.* 16;9(1):1111
3. Williams\*, W.B., Zhang\*, J., Jiang\*, C., Nicely\*, N.I., **Fera\*, D.**, Luo, K., Moody, M.A., Liao, H.X., Alam, S.M., Kepler, T.B., Ramesh, A., Wiehe, K., Holland, J.A., Bradley, T., Vandergrift, N., Saunders, K.O., Parks, R., Foulger, A., Xia, S.M., Bonsignori, M., Montefiori, D.C., Louder, M., Eaton, A., Santra, S., Scearce, R., Sutherland, L., Newman, A., Bouton-Verville, H., Bowman, C., Bomze, H., Gao, F., Marshall, D.J., Whitesides, J.F., Nie, X., Kelsoe, G., Reed, S.G., Fox, C.B., Clary, K., Koutsoukos, M., Franco, D., Mascola, J.R., Harrison, S.C., Haynes, B.F., Verkoczy, L. (2017) Initiation of HIV neutralizing B cell lineages with sequential envelope immunizations. *Nat Commun.* 23;8(1):1732 (\*equal contribution)
4. Horwitz\*, J.A., Bar-On\*, Y., Lu\*, C.L., **Fera, D.**, Lockhart, A.A.K., Lorenzi, J., Nogueira, L., Golijanin, J., Scheid, J.F., Seaman, M.S., Gazumyan, A., Zolla-Pazner, S. and Nussenzweig, M.C. (2017)Non-Neutralizing Antibodies Alter the Course of HIV-1 Infection *in vivo. Cell.* 10;170(4):637 (\*equal contribution)
5. Bonsignori\*, M., Kreider\*, E.F., **Fera\*, D.**, Meyerhoff\*, R.R., Bradley\*, T., Wiehe, K., Alam, S. A., Aussedat, B., Walkowicz, W.E., Hwang, K.K., Saunders, K.O., Zhang, R., Gladden, M.A., Monroe, A., Kumar, A., Xia, S.M., Cooper, M., Louder, M.K., McKee, K., Bailer, R.T., Pier, B.W., Jette, C.A., Kelsoe, G., Williams, W.B., Morris, L., Kappes, J., Wagh, K., Kamanga, G., Cohen, M.S., Hraber, P.T., Montefiori, D.C.,Trama, A., Liao, H.X., Kepler, T.B., Moody, M.A., Gao, F., Danishefsky, S.J., Mascola, J.R., Shaw, G.M., Hahn, B.H., Harrison, S.C., Korber, B.T., Haynes, B.F. (2017) Staged induction of HIV-1 glycan-dependent broadly neutralizing antibodies. *Science Translational Medicine.* 9(381). (\*equal contribution)
6. Easterhoff, R., Moody, M. A., **Fera, D.,** Cheng, H., Ackerman, M., Wiehe, K., Saunders, K.O., Vandergrift, N., Parks, R., Kim, J., Michael, N.L., O’Connell, R.J., Excler, J.L., Robb, M.L., Vasan, S., Rerks-Ngarm, S., Kaewkungwal, J., Pitisuttithum, P., Nitayaphan, S., Sinangil, F., Tartaglia, J., Phogat, S., Kepler, T.B., Alam, S.M., Liao, H.X., Ferrari, G., Seaman, M.S., Montefiori, D.C., Tomaras, G.D., Harrison, S.C. and Haynes, B.F. (2017) HIV envelope CD4 binding site antibodies with long variable heavy third complementarity determining region boosted with a HIV vaccine. *PLoS Pathogens.* 13(2).
7. Bradley\*, T., **Fera\*, D.**, Bhiman, J., Eslamizar, L., Lu, X., Anasti, K., Zhang, R., Sutherland, L.L., Scearce, R.M., Stolarchuk, C., Lloyd, K.E., Parks, R., Martelli, A., Foulger, A., Abdool-Karim, S.S., Barnett, S., Kepler, T.B., Alam, S.M., Montefiori, D.C., Moody, M.A., Liao, H.X., Morris, L.,Santra, S., Harrison, S.C.,and Haynes, B.F. (2016) Structural Constraints of Vaccine-Induced Tier-2 Autologous HIV Neutralizing Antibodies Targeting the Receptor Binding Site. *Cell Reports,* 14; 1-12*.* (\*equal contribution)
8. **Fera, D.**, Schmidt, A.G, Haynes, B.F., Gao, F., Liao, H.X., Kepler, T.B., and Harrison, S.C. (2014) Affinity Maturation in an HIV Broadly Neutralizing B-cell Lineage Through Reorientation of Variable Domains. *PNAS,* 111; 10275-10280
9. Malecka\*, K.A., **Fera\*, D**., Schultz, D.C., Hodawadekar, S., Reichman, M., Donover, P.S., Murphy, M., and Marmorstein, R. (2014) Identification and characterization of small molecule human papillomavirus E6 inhibitors*. ACS Chemical Biology,* 9; 1603-12*.* (\*equal contribution)
10. **Fera, D.** and Marmorstein R. (2012) Different Regions of the HPV E7 and Ad E1A Viral Oncoproteins Bind Competitively but Through Distinct Mechanisms to the CH1 Transactivation Domain of p300. *Biochemistry*, 51; 9524-9534
11. **Fera, D.**, Schultz, D.C., Hodawadekar, S., Reichman, M., Donover, P.S., Melvin, J., Huryn, D.M., and Marmorstein, R. (2012) Identification and Characterization of Small Molecule Antagonists of pRb Inactivation by Viral Oncoproteins. *Chemistry and Biology*, 19; 518-528
12. Yi, C., Troutman, S., **Fera, D.**, Stemmer-Rachamimov, A., Avila, J. L., Christian, N., Luna Persson, N., Shimono, A., Speicher, D. W., Marmorstein, R., Holmgren, L., and Kissil, J.(2011) Tight Junction- Associated Merlin-Angiomotin Complex Mediates Merlin's Regulation of Mitogenic Signaling and Tumor Suppressive Functions. *Cancer Cell*, 19; 527-540
13. Elmatad, Y., Zitolo, M., **Fera, D.**, and Jerschow, A. (2007) Examining Gas Kinetics in MATLAB. *Chem. Educator*. 12; 89-93
14. **Fera**, **D.**, Kim, N., Shiffeldrim, N., Zorn, J, Laserson, U., Gan, H.H., and Schlick, T. (2004) RAG: RNA-As-Graphs web resource. *BMC Bioinformatics*. 5:88
15. Gan, H.H, **Fera, D.**, Zorn, J, Shiffeldrim, N., Laserson, U., Kim, N., and Schlick, T. (2004) RAG: RNA-As-Graphs Database - Concepts, Analysis, and Features. *Bioinformatics*, 20; 1285-1291

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| **Patents:**1. WO 2013070586 A1, Issued: 05-16-2013; "Small molecule modulators of pRb inactivation"
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**Manuscripts in Preparation**

(undergraduate co-authors underlined; presenters are marked with \*)

1. Zhou, J.O., Zaidi, H., Ton, T., Fera, D. Antibody Affinity Maturation through Mutations at the Variable Domains Interface. *(in preparation)*

**Poster Presentations at National and International Meetings**

(undergraduate co-authors underlined; presenters are marked with \*)

1. Morriss, J.W.\*, Zhou, J.O., Fera, D. (2019). Structural Analysis of an Early Intermediate of the DH270 Broadly Neutralizing B-cell Lineage. (Poster Presentation). *HIV Vaccines (X7) Keystone Symposia*, Whistler, British Columbia Canada
2. Morriss, J.W.\*,  Fera, D. (2018). An analysis of HIV antibody-virus co-evolution to guide vaccine design. *Swarthmore Chapter Sigma Xi Poster Session,* Swarthmore, PA, USA
3. Morse, E. \*, Fera, D. (2018) Identification of the unfavorable characteristics of 1A102R, 1AZCET, and 1AH92U antibodies against HIV. *Swarthmore Chapter Sigma Xi Poster Session,* Swarthmore, PA, USA
4. Ton, T.\*, Zhou, J.O., Fera, D. (2018).Purification of a fragment of an Anti HIV-1 progenitor antibody mutant, and mutation of V1/V2 loops of HIV-1 Envelopes. *Swarthmore Chapter Sigma Xi Poster Session,* Swarthmore, PA, USA
5. Zhou, J.O. \*, Fera, D. (2018).Characterizing a CH103 Quadruple Mutant. *Swarthmore Chapter Sigma Xi Poster Session,* Swarthmore, PA, USA
6. Zhou, J.O. \*, Ton, T.\*, Fera, D. (2018). Probing Affinity Maturation in the HIV-Induced CH103 Broadly Neutralizing Antibody Clonal Lineage., FCBIS Symposium, University of Pennsylvania, Philadelphia, PA, USA

**Invited Oral Presentations:**

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| 10/1710/1610/1603/1603/1609/1509/1404/1409/13 | Structural Mimic of the HIV Envelope V3 Region Reveals Key Features of the DH270 Broadly Neutralizing Antibody Lineage Epitope and Stages of Affinity Maturation.Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NC A Structural Analysis of the Interaction with Env of the DH270 Broadly Neutralizing Glycan-Dependent B-Cell Lineage from Donor CH848, and its Cooperating Lineages DH475 and DH272 (Selected oral abstract) Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NCStructural Analysis by Negative Stain EM of Env-Fab Complexes from NHP79 and RV305.Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NCStructural Analysis of an HIV-1 Broadly Neutralizing B-Cell Lineage Targeting the Env N332 Glycan. HIV Vaccines (X8) Keystone Symposia, Olympic Valley, CA Structural Analysis of an HIV-1 Broadly Neutralizing B-Cell Lineage Targeting the Env N332 Glycan. Antibody Viral Co-evolution Workshop, Los Alamos, NM (New Mexico Consortium)Crystal Structure Reveals Why Antibodies from Rhesus Macaque Immunizations Can Neutralize Tier-2 Autologous Envs. Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NCStructural Investigations of the HIV “Arms Race” in Glycan-Dependent Antibody Lineages. Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NCStructural Analysis of Antibody Affinity Maturation in the CH103 Lineage. Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NCInvestigating the Mechanisms of the HIV “Arms Race” in the CH103 Lineage. Duke Center for HIV/AIDS Vaccine and Immunology and Immunogen Discovery, Duke University, Durham, NC |
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Grants:

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| Year(s) | Grant title |
|  | Grant type and number |
|  | Role of Project (if PI or site PI, total direct costs) |
|  | Description of the major goals |

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| 12/18 – 06/1908/17 – 07/18 | Expanding the impact of biochemistry course-based undergraduate research experiences (CUREs) by integrating efforts across the Tri-College communities. Mellon Tri-College Faculty Forum Brainstorming Grant. Co-PI with Dr. Louise Charkoudian and Dr. Yan Kung. ($300)The major goal was identify ways to integrate the development and execution of biochemistry course-based undergraduate research experiences.Structural analyses of antibody-virus complexes to guide immunogen design.amFAR Mathilde Krim Fellowship in Basic Biomedical Research, Phase IIPI ($69,565.22 – total direct costs for 1-year period)The major goal was to biochemically and structurally investigate an earlier member of a broadly neutralizing N332-glycan dependent antibody lineage in complex with the HIV envelope to determine features of the HIV envelope that triggered this lineage, and contribute to vaccine design strategies. |
| 11/16 – 07/1712/14 – 10/16  | Structural analyses of antibody-virus co-evolution to guide immunogen design.amFAR Mathilde Krim Fellowship in Basic Biomedical ResearchPI ($136,000 – total direct costs for 2-year period)The major goal was to biochemically and structurally investigate, using cryo-electron microscopy (cryo-EM), the significance of long antibody CDR loops for penetrating the HIV envelope glycan shield and the stability of difficult to neutralize envelope trimers to inform immunogen design. Interplay between antibody affinity maturation and HIV evolution in a single host NIH NIAID 1F32AI116355-01PI ($110,236 – total direct costs for 2-year period)The major goal was to determine pathways of antibody affinity maturation that have led to specific broadly neutralizing antibodies against HIV, and track the co-evolution in an infected individual of virus and antibody response. |
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| 09/09 – 08/1009/07 – 08/09 05/07 – 05/08 06/03 – 08/03 01/03 –05/03  | Structure-Based Design of HPV-E7 Inhibitors BMB Structural Biology Training Grant / University of PennsylvaniaGraduate student/Trainee The major goal was to co-crystallize human papillomavirus E7 inhibitors with their protein target and use the crystal structure to improve the potency and specificity of the inhibitors.Structure-Based Design of HPV-E7 Inhibitors NIH Chemistry-Biology Interface Pre-doctoral Training GrantNIH NIGMS GM071339Graduate student/Trainee The major goal was to identify and characterize small molecule inhibitors against the human papillomavirus E7 oncoprotein, and investigate the interaction between E7 and the p300 transcriptional co-activator.Center for Teaching and Learning Graduate FellowshipCenter for Teaching and Learning / University of PennsylvaniaGraduate Fellow – organizer of workshops ($6000)The major goal was to organize and lead teaching workshops, observe graduate students teaching and offer feedback, and meet regularly as a fellows group to discuss teaching practices and ideas. Secondary RNA Structure MotifsDepartment of Chemistry Research Fellowship / New York UniversityUndergraduate student PI ($3000)The major goal was to write computer codes and use bioinformatics to analyze RNA sequences and secondary structures across genomes to try to correlate structure to function.RAG: RNA-As-Graphs DatabaseDean’s Undergraduate Research Fund / New York UniversityUndergraduate student PI ($500)The major goal was to aid in the development of an RNA secondary structure database to catalogue structures found in nature. |

**Teaching Activities** (*at* Swarthmore College):

**Courses:**

Biological Chemistry I Laboratory (CHEM038), Spring semesters: 2018, 2019

Biological Chemistry II (CHEM048), Fall semesters: 2017, 2018

AdvancedExperimental Biological Chemistry (CHEM058), Fall semester: 2018

Special Topics in Biochemistry and its Applications (CHEM118), Spring semesters: 2018, 2019

**Research:**

Research Project (CHEM094), Fall semester, 2018, Spring semesters: 2018, 2019

Honors – Thesis Research (CHEM180), Fall semester: 2018, Spring semester: 2019

Teaching Activities (*before* Swarthmore College):

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| Year(s)  | Title of presentation or name of course/ Type of presentation/role(s) (note if presentation the result of a selected abstract) |
|  | Location (Sponsor, if any) |

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| 09/16 – 12/16,09/15 – 12/15 09/14 – 05/15 09/14 – 12/14   05/07 – 05/08 09/06 – 12/07 11/05 – 05/06 09/05 – 06/06 07/06 – 08/06, 09/03 – 05/05 09/02 – 12/04  | **Adjunct Professor of Chemistry,** School of Arts and Sciences, Massachusetts College of Pharmacy and Health Sciences Principles of Chemistry Laboratory I (academic courses) – teaching undergraduate science and nursing majors, 2.5hr session per week per semester**Adjunct Faculty,**Department of Chemistry and Physics, Emmanuel CollegePrinciples of Chemistry I Lecture and Laboratory (academic course) – teaching undergraduate science majors, 3hr lecture per week per semester, 2.5hr laboratory session per week per semester**Adjunct Faculty,**Department of the Sciences, Wentworth Institute of TechnologyEngineering Chemistry I Lecture and Laboratory (academic course) – teaching undergraduate engineering majors, 2.5hr lecture per week per semester, 2hr laboratory session per week per semester**CTL Graduate Fellow,** Center for Teaching and Learning, University of PennsylvaniaTeaching Workshops – organized and held teaching workshops for graduate students and postdoctoral fellows, 1.5hr workshop per month, 1.5hr organizational meeting per month.**General Chemistry Teaching Assistant,** Chemistry Department, University of PennsylvaniaPrinciples of Chemistry I/II Lecture and Recitations (academic courses) – teaching regular and honors undergraduate courses, 1hr recitation per week per semester, prepared and performed experimental demonstrations during lecture on occasion**Math Teacher**, College Now Program, York College/Far Rockaway HSSAT preparatory course (academic course) – teaching high school students, 4hr lecture/classwork per week per semester**Math Teacher of Algebra and Trigonometry,** Math Department, Frederick Douglass Academy VI High SchoolAlgebra and Trigonometry (academic course) – teaching high school students, 20hr lecture/classwork per week per semester**General Chemistry Recitation Teaching Assistant,** Chemistry Department, New York University Principles of Chemistry I/II Recitations (academic courses) – teaching undergraduates, up to 3 1hr recitation sections per week per semester**General Chemistry Clinic Instructor,** Chemistry Department, New York University Principles of Chemistry I/II Clinics (academic courses) – teaching undergraduates, up to 3 1hr clinic (group learning) sections per week per semester |

Supervision of Student Research (*at* Swarthmore College):

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| **Year**201920192019201920192018 - 20192018 - 2019 2018 - 20192017 - 20192017 - 2019 | **Student**Naomi Bronkema, ’20 (honors)Sarah Leonard, ‘21Adam Mermelstein, ‘21Hussain Zaidi, ‘22Pearl Zhang, ‘22Emilie Morse, ‘20Julia Morriss, ’19 (honors)Diep Nguyen, ‘19Therese Ton, ‘19Jeffrey Zhou, ’19 (honors) | **Last Career Path Known**Current StudentCurrent StudentCurrent StudentCurrent StudentCurrent StudentCurrent StudentResearch Assistant, Broad InstituteResearch Assistant, University of PittsburghResearch Assistant, Broad InstituteResearch Assistant, University of Pennsylvania |

Supervision of Research (*before* Swarthmore College):

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| **Year**2016 – 2017 20152014 – 20152014 – 201520112010 2009 – 20102007 – 2008 | **Student**Matthew Lee (technician)Claudia Jette (technician)Brendan Pier (technician)Claudia Jette, ‘15Andrew Marmorstein Stephanie Barros Catherine Tang Sarah Johnson | **Last Career Path Known**Medical student, Carle Illinois College of Medicine Ph.D. student, California Institute of Technology Medical student, University of Connecticut Medical SchoolPh.D. student, California Institute of Technology Computer Software Developer, OverDrive Inc.Scientist, Janssen Vice President, PJT Partners Licensing Manager, Drexel Ventures, Drexel University |

College and Departmental Service (*at* Swarthmore College):

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| Year(s) of Membership | Name of Committee | Institution/Organization |
|  | Dates of Role(s) | Title of Role(s) |
| 03/19 – Present09/18 – Present09/18 – Present | Richard Rubin Scholar Mentor Fellowships and Prizes Committee Phi Department Academic Assessment Liaison |

Academic Service (*before* Swarthmore College):

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| Year(s) of Membership | Name of Committee | Institution/Organization |
|  | Dates of Role(s) | Title of Role(s) |

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| 06/16 – 07/17 06/15 – 07/17 03/15 – 07/17 11/09, 05/11 07/09, 07/10 09/08 – 05/09 09/08 – 05/09 03/08 – 04/08  | Boston Children’s Hospital Postdoctoral Association, Mentoring Committee ChairBoston Children’s Hospital Postdoctoral Association, Mentoring CommitteeHMS Biological Chemistry and Molecular Pharmacology Training Committee Organizing Committee, Chemical Biophysics Mini-Symposium Organizing Committee,Chemistry-Biology Interface Scientific Retreat Graduate & Professional Student Assembly Student Life Policy Council Graduate & Professional Student Assembly Recreation Advisory Board Selection Committee for Penn Prize for Excellence in Teaching by Graduate Students  |

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**Service to the Scientific/Academic Community outside of Swarthmore**

04/19 Panel Speaker, UPenn Career Services Academic Job Search Series for Ph.D.

 students and postdoctoral fellows

03/19 Session Chair, HIV Vaccines (X7) Keystone Symposia, Whistler, British

 Columbia Canada

09/18 – present Scientific Advisory Committee member, amfAR, The Foundation for AIDS Research

10/17 – present Ad Hoc Reviewer for Scientific Journals (Nature Communications, EMBO Journal)

03/16 Moderator, Antibody Viral Co-evolution Workshop, Los Alamos, NM (New Mexico

 Consortium)

Memberships:

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| Year(s) of Membership | Society Name |  |
|  | Dates of Role(s) | Title of Role(s) |

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| 201820122005 | Sigma XiAmerican Chemical Society Phi Lambda Upsilon |