

# Anna Iouchmanov

[anna.iouchmanov@uga.edu](mailto:anna.iouchmanov@uga.edu)

(412) 334-5469

## EDUCATION

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### UNIVERSITY OF GEORGIA

**Graduate Student**

3.910 GPA

**Department:** Genetics

8/2020-present

### UNIVERSITY OF PITTSBURGH

**Undergraduate Student**

3.670 GPA

**Major:** Biological Sciences

8/2016-12/2019

**Minors:** Chemistry and Italian

## RESEARCH INTERESTS

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CRISPR/Cas9 • Reptiles as an Animal Model • Functional Outcomes of Gene Modification • Scientific Illustration

## RESEARCH APPOINTMENTS

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- 12/2020 - present      **Graduate Researcher- Laboratory of Doug Menke, Ph.D.**  
Franklin College of Arts and Sciences  
Paul D. Coverdell Center for Biomedical and Health Sciences  
University of Georgia Department of Genetics
- 12/2019 - 7/2020      **Lab Manager and Technician- Laboratory of Corina O. Bondi, Ph.D.**  
Safar Center for Resuscitation Research  
Children's Hospital of Pittsburgh  
UPMC Department for Physical Medicine & Rehabilitation
- 12/2016 - 12/2019      **Undergraduate Research Assistant- Laboratory of Corina O. Bondi, Ph.D.**  
Safar Center for Resuscitation Research  
Children's Hospital of Pittsburgh  
UPMC Department for Physical Medicine & Rehabilitation

## PUBLISHED WORKS

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Alan Garcia-Elfring, Christina E. Sabin, **Anna L. Iouchmanov**, Heather L. Roffey, Sukhada P. Samudra, Aaron J. Alcalá, Rida S. Osman, James D. Lauderdale, Andrew P. Hendry, Douglas B. Menke, and Rowan D.H. Barrett. Piebaldism and chromatophore development in reptiles are linked to the *tfec* gene, *Current Biology* (2023), <https://doi.org/10.1016/j.cub.2023.01.004>

Lindsay A. Kutash, Eleni H. Moschonas, Darik A. O'Neil, Timothy J. Craine, **Anna L. Iouchmanov**, Carlson R. Sunleaf, Melissa A. Nicholas, Katherine O. Grobengieser, Aarti Patel, Mihaela Toader, Tyler S. Ranellone, Piper L. Rennerfeldt, Leffrey P. Cheng, Nicholas S. Race, Anthony E. Kline, Corina O. Bondi. Sustained attention performance deficits in the three-choice serial reaction time task in male and female rats after experimental brain trauma. *Brain Research* (2023), <https://doi.org/10.1016/j.brainres.2023.148336>

## MANUSCRIPTS IN PREPARATION

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Christina E. Sabin, Sukhada P. Samudra, **Anna L. Iouchmanov**, Amber L. Rittgers, James D. Lauderdale, Douglas B. Menke. A surgical Method for Oocyte Injection and CRISPR-Cas9 Mutagenesis in Anole Lizards. Cold Spring Harbor Protocols (in preparation).

Timothy J. Craine, Nicholas S. Race, Lindsay A. Kutash, **Anna L. Iouchmanov**, Eleni H. Moschonas, Darik A. O'Neil, Carlson R. Sunleaf, Aarti Patel, Nima Patel, Katie O. Grobengieser, Ian P. Marshall, Taylor N. Magdelinic, Jeffrey P. Cheng, Corina O. Bondi. Milnacipran ameliorates executive function impairments following frontal lobe traumatic brain injury in male rats: a multimodal behavioral assessment. J. Neurotrauma (2022) (in review).

Bondi CO, Grobengieser K, Turocy A, Craine T, **Iouchmanov A**, Sunleaf C, Kutash L. Instrumental learning and behavioral flexibility in adolescent rats following pediatric traumatic brain injury (in preparation).

## PRESENTATIONS AND ABSTRACTS

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- 10/2023      The role of *tbx4* in *Anolis* lizard hindlimb development & evolution.  
**Anna Iouchmanov**, Sukhada Samudra, Christina Sabin, Ed Stanley, Doug Menke. *14<sup>th</sup> Annual Developmental Biology Fall Symposium, October 10, 2023, Paul D. Coverdell Center for Biomedical and Health Sciences, University of Georgia, Athens GA*
- 08/2023      Utilizing improvements in gene editing technology to study the impact of enhancer deletions on hindlimb length in *Anolis* lizards.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke. *UGA Department of Genetics Fall Retreat, August 24, 2023, Flinchum's Phoenix, Athens GA*
- 07/2023      Functional Investigations of *tbx4* Enhancer Deletions on Hindlimb Morphology and Gene Transcription in *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke. *Society for Developmental Biology 82<sup>nd</sup> Annual Meeting, July 20-23, 2023, Hyatt Regency, Chicago IL*
- 05/2023      Utilizing improvements in gene editing technology to study the impact of enhancer deletions on hindlimb length in *Anolis* lizards.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke. *Developmental Biology Spring Retreat, May 15, 2023, Complex Carbohydrate Research Center, University of Georgia, Athens GA*
- 11/2022      Determining the Impact of Enhancer Deletions on *T-box Transcription Factor 4 (tbx4)* Expression and Hindlimb Length in *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke. *13<sup>th</sup> Annual Developmental Biology Fall Symposium, November 11, 2022, Paul D. Coverdell Center for Biomedical and Health Sciences, University of Georgia, Athens GA*
- 9/2022      Determining the Impact of Enhancer Deletions on *T-box Transcription Factor 4 (tbx4)* Expression and Hindlimb Length in *Anolis sagrei*.

**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke.  
*UGA Department of Genetics Fall Retreat, September 16, 2022, Flinchum's Phoenix, Athens GA*

- 8/2022 Determining the Impact of Enhancer Deletions on *T-box Transcription Factor 4 (tbx4)* Expression and Hindlimb Length in *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke.  
*16<sup>th</sup> International Conference on Limb Development, Regeneration, and Evolution, August 8-11, 2022, Northwest Building, Harvard University, Cambridge MA*
- 6/2022 Determining the Impact of Deletions in Hindlimb Enhancer B (HLEB) on *T-box Transcription Factor 4 (tbx4)* Expression and Hindlimb Length in *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke.  
*Southeastern Regional Society for Developmental Biology Conference, June 1-3, 2022, Friday Center for Continuing Education, University of North Carolina at Chapel Hill, Chapel Hill NC*
- 4/2022 Determining the Impact of Deletions in Hindlimb Enhancer B (HLEB) on *T-box Transcription Factor 4 (tbx4)* Expression and Hindlimb Length in *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Ed Stanley, Doug Menke.  
*Developmental Biology Spring Retreat, April 22, 2022, Complex Carbohydrate Research Center, University of Georgia, Athens GA*
- 11/2021 Mutations in Transcription Factor EC (*TFEC*) Result in Piebald Phenotypes in the Brown Anole, *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Aaron Alcalá, Alan Garcia-Elfring, Heather L. Roffey, Andrew P. Hendry, Rowan D. H. Barrett, Jim Lauderdale, Doug Menke. *DevBio Fall Symposium, November 11, 2021, University of Georgia Webinar*
- 7/2021 Panelist in the Menke Lab's Lizard Gene-Editing Virtual Workshop, *July 29, 2021, University of Georgia Webinar*
- 5/2021 Mutations in Transcription Factor EC (*TFEC*) Result in Piebald Phenotypes in the Brown Anole, *Anolis sagrei*.  
**Anna Iouchmanov**, Christina Sabin, Sukhada Samudra, Aaron Alcalá, Alan Garcia-Elfring, Heather L. Roffey, Andrew P. Hendry, Rowan D. H. Barrett, Jim Lauderdale, Doug Menke. *DevBio 'Virtual' Spring Retreat, May 10, 2021, University of Georgia Webinar*
- 2/2020 Instrumental Learning and Behavioral Flexibility in Adolescent and Adult Rats Following Traumatic Brain Injury.  
**Anna Iouchmanov, B.S.**, Katherine Grobengieser, Aarti Patel, Alaina Turocy, Sarah Sha, Taylor Magdelinic, Lindsay A. Kutash, B.S., Jeffrey P. Cheng, B.S., Anthony E. Kline, Ph.D., and Corina O. Bondi, Ph.D. *University Honors College Research Fair, February 2020, William Pitt Union, University of Pittsburgh, Pittsburgh PA*
- 10/2019 The Effect of Experimental Brain Trauma on Sustained Attention in Female versus Male Rats

**Anna L. Iouchmanov**, Lindsay A. Kutash, B.S., Carlson Sunleaf, Timothy Craine, B.S., Jeffrey P. Cheng, B.S., Anthony E. Kline, Ph.D., and Corina O. Bondi, Ph.D.  
*Neuroscience 2019 Conference, October 19-23, 2019, McCormick Place, Chicago Il*

- 9/2019 When Two Wrongs Make a Right: The Effect of Acute and Chronic Binge Drinking on TBI Outcomes in Young Adult Female Rats  
J. Christensen, E. Eyolfson, S. Salberg, D. Bhatt, H. Weerawardhena, J. Tabor, R. Mychasiuk. *Presented at the Safar Center for Resuscitation Research Neurointensive Critical Care and Resuscitation Journal Club, John G Rangos Research Center, University of Pittsburgh, Pittsburgh PA*
- 6/2019 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Female Rats  
**Anna Iouchmanov**, Lindsay Kutash, Carlson Sunleaf, Katherine Grobengieser, Sarah Sha, Aarti Patel, Timothy Craine, Jeffrey Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *37<sup>th</sup> National Neurotrauma Society Symposium, June 29-July 3, 2019, Wyndham Grand Pittsburgh Downtown, Pittsburgh PA*
- 6/2019 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Female Rats  
**Anna Iouchmanov**, Lindsay Kutash, Carlson Sunleaf, Katherine Grobengieser, Sarah Sha, Aarti Patel, Timothy Craine, Jeffrey Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *37<sup>th</sup> National Neurotrauma Society Symposium during the “Bridging Gaps in Understanding the Neurobiology and Neurotechnology of Function after Neurotrauma” community event, June 29, 2019, Wyndham Grand Pittsburgh Downtown, Pittsburgh PA*
- 4/2019 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Female Rats  
**Anna Iouchmanov**, Lindsay Kutash, Carlson Sunleaf, Katherine Grobengieser, Timothy Craine, Jeffrey Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *Presented as an oral presentation at the 2019 Safar Center Multi-Departmental Research Day, April 22, 2019, John G Rangos Research Center, University of Pittsburgh, Pittsburgh PA. One of top 5 abstracts chosen for an oral presentation (out of 45 submissions)*
- 2/2019 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Rats  
**Anna Iouchmanov**, Timothy J. Craine, Darik A. O’Neil, B.S./B.A., Lindsay A. Kutash, Jeffrey P. Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *University of Pittsburgh’s Department of Biological Sciences Research Day, February 2019, Langley Hall, University of Pittsburgh, Pittsburgh PA*
- 8/2018 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Rats.  
**Anna Iouchmanov**, Nima Patel, Timothy J. Craine, Darik A. O’Neil, B.S./B.A., Lindsay A. Kutash, Jeffrey P. Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *NeuroTrauma 2018 Conference, August 11-16, 2018, Westin Harbor Castle, Toronto, Canada*
- 7/2018 Magnesium Administration After Experimental Traumatic Brain Injury Improves Decision-Making Skills

Jennica M. Young, Michael R. Hoane. *Presented at the Safar Center for Resuscitation Research Neurointensive Critical Care and Resuscitation Journal Club, July 2018, John G Rangos Research Center, University of Pittsburgh, Pittsburgh PA*

- 7/2018 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Rats.  
**Anna Iouchmanov**, Nima Patel, Timothy J. Craine, Darik A. O’Neil, B.S./B.A., Lindsay A. Kutash, Jeffrey P. Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *Presented as an oral presentation at the Safar Center for Resuscitation Research Student Research Day, July 17, 2018, John G Rangos Research Center, University of Pittsburgh, Pittsburgh PA*
- 5/2018 The Effect of Experimental Brain Trauma on Sustained Attention and Behavioral Flexibility in Rats.  
**Anna Iouchmanov**, Nima Patel, Timothy J. Craine, Darik A. O’Neil, B.S./B.A., Lindsay A. Kutash, Jeffrey P. Cheng, B.S., Anthony E. Kline, Ph.D., Corina O. Bondi, Ph.D. *Safar Center Multi-Departmental Research Day, May 31, 2018, University Club, University of Pittsburgh, Pittsburgh PA*
- 10/2017 Detrimental effects of traumatic brain injury on attentional set-shifting behavior in female rats.  
**Iouchmanov, A.**, Nicholas, M., Tennant, H., Free, K., Leary, J., LaPorte, M, Cheng, J., Kline A., Bondi C. *2017 SACNAS Conference, October 19-21, 2017, Salt Palace Convention Center, Salt Lake City UT*
- 5/2017 Detrimental effects of traumatic brain injury on attentional set-shifting behavior in female rats.  
**Iouchmanov, A.**, Tennant, H., Free, K., Leary, J., LaPorte, M, Cheng, J. , Kline A., Bondi C. *Presented as an oral presentation at the 2017 Safar Center Multi-Departmental Research Day, May 22-23, 2017, John G Rangos Research Center, University of Pittsburgh, Pittsburgh PA. Winner of 2<sup>nd</sup> place oral presentation (out of top 5 abstracts from 55 submissions)*
- 4/2017 Frontal lobe brain trauma impairs attentional set-shifting performance in male rats.  
**Iouchmanov, A.\***, Chipchase, A.\*, Ellison, D.\*, Marshall, I., Nicholas, M., Kutash, L., O’Neil, D.A., Radabaugh, H.L., Kline, A.E., & Bondi, C.O. *First Experiences in Research Symposium, April 2017, University of Pittsburgh, Pittsburgh PA (\* denotes equal first authorship)*

#### HONORS AND SCHOLARSHIPS

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- 5/2023 Patricia and Doyle Mote Support Fund for Biomedical Research Award
- 7/2022 University of Georgia Graduate Student Domestic Travel Grant
- 6/2022 16th International Conference on Limb Development, Regeneration, and Evolution Travel Award
- 6/2022 NIH T32 Genetics Training Grant (University of Georgia)
- 4/2021 NIH T32 Genetics Training Grant (University of Georgia)
- 4/2020 Osborne Assistantship Award (University of Georgia)
- 9/2019 University of Pittsburgh Student Government Board Travel Grant
- 9/2019 University of Pittsburgh Office of Undergraduate Research Curiosity Grant
- 12/2018 University of Pittsburgh Chancellor’s Undergraduate Research Fellowship

8/2018 Pitt Honors Travel Award  
8/2018 Neurotrauma 2018 Diversity Fellowship  
2017 2017 Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Travel Scholarship Award  
2016-19 Dean's List (University of Pittsburgh)  
2016-19 Lee Noble Scholarship (University of Pittsburgh)

#### CONFERENCES ATTENDED

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11/2023 TBX4Life / TBX4 Syndrome 2nd International Scientific Conference, Nov 29-30 and Dec 5, 2023, *Zoom Webinar*  
07/2023 Society for Developmental Biology 82<sup>nd</sup> Annual Meeting, July 20-23, 2023, *Hyatt Regency, Chicago IL*  
11/2022 TBX4Life International Scientific Conference, Nov 16-17, 2022, *Zoom Webinar*  
08/2022 16<sup>th</sup> International Conference on Limb Development, Regeneration, and Evolution, August 8-11, 2022, *Northwest Building, Harvard University, Cambridge MA*  
06/2022 Southeastern Regional Society for Developmental Biology Conference, June 1-3, 2022, *Friday Center for Continuing Education, University of North Carolina at Chapel Hill, Chapel Hill NC*  
03/2022 Southeastern Population Ecology and Evolutionary Genetics Conference (SEPEEG), March 25-27, *Rock Eagle 4-H Center, University of Georgia, Eatonton GA*  
7/2021 Society for Developmental Biology 80<sup>th</sup> Annual Meeting, July 12-16, *virtual*  
5/2021 Southeast Society for Developmental Biology Regional Meeting, May 18-20, *virtual*  
10/2019 Neuroscience 2019 Conference, October 19-23, 2019, *McCormick Place, Chicago IL*  
06/2019 37<sup>th</sup> National Neurotrauma Society Symposium, June 29-July 3, 2019, *Wyndham Grand Pittsburgh Downtown, Pittsburgh PA*  
08/2018 NeuroTrauma 2018 Conference, August 11-16, 2018, *Westin Harbor Castle, Toronto, Canada*  
10/2017 Society for the Advancement of Chicanos/Hispanics and Native Americans in Science Conference (SACNAS), October 19-21, 2017, *Salt Palace Convention Center, Salt Lake City UT*

#### TEACHING EXPERIENCE

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Fall 2023 TA for GENE 3200 (Genetics) under Dr. Mary Bedell. *Responsible for leading the discussion sections alongside the other TA, as well as grading exams and holding office hours.*

#### RELEVANT EXTRACURRICULAR ACTIVITIES

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2021-current Society for Developmental Biology- Member. *The SDB is an inclusive, global community of scientists and educators dedicated to furthering the field of developmental biology.*

- 2021-22 Developmental Biology Graduate Student Association- Secretary. *The DBGSA is the graduate student association for students interested in developmental biology. It is an interdisciplinary group with members comprised of students from several departments including but not limited to genetics, neuroscience, and cell biology.*
- 2018-20 National Neurotrauma Society- Member. *The NNS is a society that is committed to the promotion of neurotrauma research by enhancing communications between researchers in the field and increasing support for the field on both a national and international level.*
- 2017-20 Safar Center for Resuscitation Research Neurointensive Critical Care and Resuscitation Journal Club. *The Safar Center Journal Club is dedicated to bringing to light new and classic articles in the fields of rehabilitation and resuscitation. The club carefully discusses a new article each week, followed by questions and critiques that encourage critical thinking and attention to experimental design.*
- 2017-20 National Society for Collegiate Scholars Pittsburgh Chapter- Member. *NSCS is an honor society that recognizes and elevates high-achieving students. Less than 10% of students at institutions with NSCS chapters qualify for membership in this prestigious society each year.*
- 2018 Neuroscience Summer Undergraduate Research Internship Program. *The Summer Undergraduate Research Internship Program (SURIP) allows for independent and continued research during the summer months. At the end of the summer, every participant gives a presentation about their project to the others, lending a broader view of the field of Neuroscience as a whole. May - August 2018.*