

Contributors

Tayeeba Ahmed is a junior at Valley Stream South High School located in Valley Stream, New York. She is particularly interested in the field of law and global politics and hopes to pursue a career as a civil rights attorney in the future. At school, she is a member of the National Honors Society, Math Honor Society, Art Honor Society, Science Honor Society, History Honor Society, Language Honor Society, and the Occupational Honor Society. In addition to this, she is also involved in various clubs and sports, she is currently the Captain of Mock Trial and is a member of the Varsity Track and Varsity Tennis teams at South High School.

Rida Bonday is a senior at Carmel High School. She is deeply interested in the relationship between music and the brain. Next year, she will be majoring in neuroscience with a possible second major in biotechnology. In her free time, she composes music, writes poetry, and sings a cappella.

James Crossland is a grade 12 student attending Royal St. George's College, an independent boys school in Toronto, Canada. He will be attending the University of St. Andrews in Scotland next year and will be studying International Relations and Economics.

Emma Fridy is currently a junior in high school at Dupont Manual in Louisville, KY. She is a passionate academic who is always ready to challenge herself. Emma enjoys almost all subjects, but she has a special affinity for the humanities as well as language and linguistics. She chose to pursue her first extended research project in dialect perception, a field which she plans to study further in college. In her free time, Emma is captain of her debate team, helps her community, and is active in local politics. Altogether, she is an extremely well-rounded student with a bright future.

Katrina Gonzales is a junior in the Commercial Art & Graphic Design program at the Bergen County Technical High School in Teterboro, New Jersey. While her research focuses on a topic within the psychology field, she is interested in pursuing her passion for mathematics by having a career in finance. Gonzales is also a member of her school's Heroes & Cool Kids

Program, where she mentors middle school students about making positive lifestyle choices highlighting drug and alcohol prevention. Outside of school, Gonzales enjoys playing the piano and painting.

Ziyu Han is currently a Grade 12 student studying at St. Andrew's College in Aurora, Ontario. He was born in China but moved to Canada at the age of 2. Passionate about the sciences and mathematics, Ziyu plans to pursue an Industrial engineering degree in university, hoping to apply his knowledge to a global scale in helping communities around the world. To stay active, he plays a variety of sports during the year: soccer in fall, basketball in winter, and badminton in spring. During spare time, he enjoys playing Chess and is always eager to face new opponents.

Norah Khadraoui is a junior in the law and justice program at Bergen County Technical High School in Teterboro New Jersey. With aspirations to become a lawyer, she has decided to dedicate a year to research narcotics-related mandatory minimum sentencing. Currently, Norah Khadraoui has chosen to continue to focus on the field of criminal justice and civil rights by embarking on a year-long public policy project regarding ICE detainment in her county's jail. While she is not conducting research Norah Khadraoui is the president of her school's Awareness Club dedicated to bringing under-reported issues into the light.

Nari Kim is a high school student who has conducted research studies since middle school. This past year, the researcher placed fourth in the Kentucky Regional Junior Science and Humanities Symposium, advancing to the National Junior Science and Humanities Symposium as a Kentucky representative.

Max Livingston is a high school senior currently attending Royal St. George's College in Toronto. Next year, he will be studying Political Science and Economics at the University of Western Ontario.

Connie Zhang was born in Oakville, Ontario. She is currently finishing her final year of high school as a student at Appleby College and intends to study law post-secondary in the United Kingdom at King's College London.

Faculty and Advisors to Contributors

Jeanette Azzaretto is the Science Department Chairperson at Valley Stream South High School in Valley Stream, New York. She also teaches the AP Research class as part of the College Board's Capstone program. Mrs. Azzaretto is from Seaford, New York and graduated with her Bachelor's Degree in Geology and Secondary Education and her Master's Degree in Secondary Education from Hofstra University. She continued on in her education earning her School Administrative Degree from Stony Brook University. She has taught science at Valley Stream South since Fall 1996. She has worked with students in Science Research as well as the traditional science classes and just recently started teaching the AP Research class. Mrs. Azzaretto is passionate about her profession, dedicated to her students, and enjoys new challenges.

Clay Dion is an AP Capstone teacher at Appleby College, teaching both AP Seminar and AP Research in addition to senior school English classes. He is also the Coordinator of the school's Centennial Scholarship programme. He holds a Master's Degree in English Literature from Western University as well as undergraduate degrees in both English (Western) and Mathematics (Waterloo). Before coming to Appleby, he was a sessional instructor, teaching courses in poetry and 18th Century Literature at Western University and delivered papers at various conferences, including a paper at Princeton University about the influence of Einstein's theories on the Beat poets.

Jonathan Lancaster and **Daniel Olivo** co-teach AP Seminar and AP Research at Bergen County Technical High School in Teterboro, New Jersey. Together, they combine backgrounds in the social sciences and natural sciences to foster a classroom that seeks to create genuine curiosity, communal collaboration, and individual accountability. As their research program evolves, they seek to continue building their students' research skills and expanding the presence of student-centered original research in their community. Jonathan holds a degree in History and is currently pursuing an advanced degree at Rutgers University. Daniel holds a degree in Biology and a master's degree in Science Education.

Katie Moltz is an English teacher at Valley Stream South High School in Valley Stream, NY. She teaches AP Research which is part of the College Board's Capstone program, as well as seventh grade English. Ms. Moltz is from Valley Stream and graduated with her Bachelors and Masters degree in English and Special Education from Molloy College. She has been teaching at Valley Stream South for the past three years, and is involved with various extracurricular activities. Ms. Moltz is excited to grow the Capstone program at her school, and continue to foster the love of learning in her students.

Michelle Satchwell is an English teacher at Carmel High School in Carmel, Indiana. She teaches AP Research in the AP Capstone program as well as dual-credit and honors classes. She has been an AP College Board Consultant for AP Capstone since 2014. Co-author of Reading Lists for College-Bound Students and STACS: Strategies to Acquire Composition Skills, Mrs. Satchwell was the Carmel Clay school corporation's Teacher of the Year in 2004 and is an Armstrong Teacher Educator at Indiana University. Mrs. Satchwell is a devoted educator who delights in helping her students reach their potential.

Samantha Scheepers is an Upper School English and AP Research teacher at St. Andrew's College. She is also the chair of the school's Standing Committee for Excellence in Teaching and Learning. She holds a Master's of Teaching, specializing in metacognition and reading comprehension, as well as a BA (Hons.) with high distinction in English and Renaissance Studies from the University of Toronto. She has recently completed a teaching fellowship focused on leadership in independent schools at Columbia University and has presented her research on cooperative learning through the International Boys' School Coalition.

Alesia Williams has a background in the humanities. She has a BA in art history from Berea College and has completed coursework for an MA from the University of Cincinnati. She has a MAT with a focus on English from Spalding University. She has been teaching in the public school system in Louisville, KY for sixteen years. Thirteen of those years have been at duPont Manual High School which has five magnets

and is typically ranked as the best high school in Kentucky. She has been teaching AP English Language and Composition for ten years and AP Research for one year. She is focused on helping her students achieve at the highest levels, especially in regards to academic writing. She encourages her students to think of themselves as writers and to pursue writing competitions and publication. Her students have been recognized with top honors from the NCTE and KCTE writing competitions, the Scholastic Art and Writing competition, and the MIT INSPIRE research competition.

Editors of the Journal

Suzanne Conklin
Akbari

BA, MA, MPhil,
PhD

Suzanne Conklin Akbari is professor of English and Medieval Studies at the University of Toronto, and was educated at Johns Hopkins and Columbia. Her research focuses on the intersection of English and Comparative Literature with intellectual history and philosophy, ranging from neo-platonism and science in the twelfth century to national identity and religious conflict in the fifteenth century. Akbari's books are on optics and allegory (*Seeing Through the Veil*), European views of Islam and the Orient (*Idols in the East*), and travel literature (*Marco Polo*); she is currently at work on *Small Change: Metaphor and Metamorphosis in Chaucer and Christine de Pizan*. She is volume editor for the *Norton Anthology of World Literature* (Volume B: 100-1500), co-editor of the *Norton Anthology of Western Literature*, and editor of *The Oxford Handbook to Chaucer*. She has begun a new research project called *The Shape of Time*, contrasting the temporal breaks found in medieval chronicle traditions with poetic narrations of the historical past. Akbari is cross-appointed to the following units at the University of Toronto: Centre for Medieval Studies; Centre for Comparative Literature; Centre for Jewish Studies; Department of Near and Middle Eastern Civilizations; Centre for Reformation and Renaissance Studies.

Barrie Bennett

BPE, MEd, PhD

Barrie Bennett is professor emeritus at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). His research work focuses primarily on the design of powerful learning environments for students and teachers through the process of systemic change. He is currently working in districts in three countries on long-term projects related to instructional intelligence and systemic change (Australia, Ireland and Canada). Instructional intelligence involves intersecting the current research on curriculum, assessment, and instruction guided by what is known about how students and teachers learn. That intersection being driven by what is known about change and systemic change. He also assists teachers, schools, and districts with issues related to classroom management and school wide-discipline. Barrie has taught at the elementary and secondary levels, as well as, having worked in group homes, prisons, and security units for juvenile offenders. He has written six books: *Cooperative Learning: Where Heart Meet Mind*; *Classroom Management: A Thinking and Caring Approach*; *Beyond Monet: The Artful Science of Instructional Integration*; *Graphic Intelligence: Playing With Possibilities* and most recently *Power Plays*. Currently he is just finishing a text titled, *Effective Group Work: Beyond Cooperative Learning*.

Anthony Campbell

BA, MA, PhD

Anthony Campbell established Grow for Good Urban Teaching Farm in 2013 as a business model innovation laboratory and learning centre for young entrepreneurs. He spent time working throughout North America, Europe, Australia, Asia and now resides in his hometown of Toronto. Examples of Anthony's work are documented in *The Innovator's Field Guide* (2014), co-authored by David Crosswhite and Peter Skarzynski, as well as multiple Harvard Business School and Corporate Executive Board case studies chronicling the innovation and capability-building efforts of companies such as Samsung, Whirlpool, Best Buy and McDonald's. Previously, Anthony taught Film Studies, Writing and English Literature at The University of Western Ontario.

- Jeremy B. Caplan
ScB, PhD
Jeremy Caplan is an Associate Professor in Psychology Department at the University of Alberta, where he is also the Principal Investigator at the University of Alberta Computational Memory Lab. The lab is focused on human verbal memory behaviour and its basis in cognitive and neural processes. The team takes several approaches towards research, including mathematical modeling, measures of behaviour in the cognitive psychology tradition, and measures of brain activity using electroencephalography (event-related potentials and oscillations) and functional magnetic resonance imaging. He has been a referee for 38 academic journals.
- Nathan Chow
BSc, Msc, BEd
Nathan Chow teaches Physical Sciences at Royal St. George's College (RSGC) in Toronto and consults on educational material at Perimeter Institute for Theoretical Physics in Waterloo. He has worked with Ontario's Ministry of Education to develop research-based teaching resources for Physics teachers within the province and across the rest of Canada. His academic research explored whether or not we understand how gravity behaves at intergalactic distances and provided possible explanations for our observations of dark energy. He has presented this research and led teacher training workshops around the world. In addition to AP Physics 1 and C, he teaches the AP Capstone Research course at RSGC.
- Hance Clarke
BSc, MSc, MD,
PhD, FRCPC
Dr. Clarke is the director of Pain Services and the medical director of the Pain Research Unit at the Toronto General Hospital. He is appointed to the Institute of Medical Sciences at the University of Toronto and is a graduate of the Royal College Clinician Scientist Program. His research interests include identifying novel acute pain treatments following major surgery, identifying the factors involved in the transition of acute postsurgical pain to chronic pain, studying the genetics of acute and chronic pain after surgery, and identifying risk factors associated with continued opioid use and poor health related quality of life after major surgery as well as the efficacy of hyperbaric medicine. Over the past five years he has authored 47 peer reviewed manuscripts.
- Will Fripp
BA, MA
Will Fripp is a public affairs and political risk analyst for Canadian and international clients. A B.A. in History and Political Science from Victoria University at the University of Toronto and an M.A. in Intelligence and International Relations from the University of Salford in Manchester, England, he is a historian specializing in intelligence and espionage, and its modern influences. Will anchored www.spiesintheshadows.com, a web based curriculum outlining Canadian foreign intelligence history and its impacts on Canada's national development. An occasional lecturer, Will's writings and review articles appear in peer-reviewed academic journals like *Intelligence and National Security*, and elsewhere.
- Michael Gemar
BSc, BA, PhD
Michael Gemar received undergraduate degrees in Psychology and Philosophy from Rice University, and a PhD in experimental psychology from the University of Toronto. He has worked as a researcher at the Centre for Addiction and Mental Health, examining the cognitive and neural correlates of mood disorders, and was involved in a landmark study demonstrating the efficacy of mindfulness meditation to prevent depressive relapse. He has co-authored numerous journal articles, and taught for over a decade at U of T. More recently, he has worked in the area of health policy, and is currently at a Canadian non-profit.
- Jennifer Goldberg
BA, BEd, MA
Jennifer Goldberg holds an M.A. in History from the University of Toronto. Her graduate studies focused on teacher misconduct in 19th century Ontario, and her research is published in *Historical Studies in Education*. She currently teaches at Havergal College, where she has also served as Chair of Teaching and Learning. In this capacity, she has explored the role of feedback in student learning, and has presented on this work at the National Coalition of Girls' Schools and Conference of Independent Teachers of English.

- Margaret S. Herridge
BSc, MSc, MPH,
MD, FRCPC
- Margaret Herridge is a Professor of Medicine and Senior Scientist at the University of Toronto. She is also a senior clinician in Critical Care and Respiratory medicine at University Health Network. Her research focus is on long-term outcomes after critical illness for patients and families and specifically on functional, neuropsychological, healthcare utilization and quality of life metrics. Her graduate studies were in Cell and Molecular Biology at Queen's University where she subsequently obtained her degree in Medicine. After completing her clinical training in Internal Medicine/Respirology and Critical Care at the University of Toronto, she obtained her Master of Public Health in Epidemiology and Statistics from the Harvard School of Public Health.
- Ted Higginbotham
BSc, MSc
(Candidate)
- Ted Higginbotham is a graduate student at The University of Toronto and Hospital for Sick Children. His research is focused on further delineating the role of genomic structural variation in autism spectrum disorder and human disease. Ted is a contributing member of the Clinical Genome Resource (ClinGen), an international consortium working to define the clinical relevance of genes for use in precision medicine and translational research.
- Tim Hutton
BA, MLIS
- Tim Hutton is a teacher-librarian at Royal St. George's College. He has a BA in History and American Studies from the University of Toronto and a Masters in Library and Information Science from San Jose State University. At the secondary level, he has taught courses in the social sciences, humanities and communications technology, including a locally designed interdisciplinary course in urban studies.
- Ira Jacobs
Dip Phys Ed,
MHK, DrMedSc
- Professor Ira Jacobs became dean of the Faculty of Kinesiology & Physical Education at the University of Toronto on July 1, 2010, and was re-appointed to his current second decanal term. Before assuming this role, Jacobs was chair of York University's School of Kinesiology and Health Science from 2007 until 2010, and a federal government scientist from 1982 until 2007.
- Jacobs earned his doctorate in clinical physiology from Sweden's Karolinska Institute, where he specialized in skeletal muscle metabolism. For the next 25 years, he did extensive exercise physiology research in Canada's human sciences laboratory, operated by the Department of National Defence. There, Jacobs rose to the position of chief scientist and led a unique international research group that helped to enhance the performance of military special operations units through their research into physiological, nutritional and pharmacological strategies.
- He is a past president of the Canadian Society for Exercise Physiology and the Canadian Council of University Physical Education and Kinesiology Administrators. He is a fellow of the American College of Sports Medicine, an international fellow of the US National Academy of Kinesiology, and in 2016, he was named a Fellow of the Canadian Academy of Health Sciences.
- Jacobs' research has led to the publication of more than 200 scientific articles, reports and book chapters about his research interests that include the physiological responses to physical exertion in environmental extremes, performance enhancement through pharmacological and nutritional manipulation of metabolism, and exercise pharmacology.
- During his term as dean, the Faculty of Kinesiology & Physical Education has been rated as among the top academic programs in the world for kinesiology, physical education, sport and exercise sciences.

- John Lambersky
BA, MA, BEd,
PhD
- John Lambersky is a teacher and head of the Canadian and World Studies department at Royal St. George's College in Toronto, where he leads the AP Capstone program. He has presented his work on teaching practice at the conferences of the International Boys' School Coalition, the National Association of Independent Schools, and the Canadian Accredited Independent Schools. His academic research is focused on school culture as a mechanism for school improvement. His work has been featured in *Leadership and Policy in Schools*, *The Dalhousie Review*, and *The Nashawaak Review*.
- Lori Loeb
BA, MA, PhD
- Lori Loeb is Associate Professor of Modern British history at the University of Toronto. She has a Masters in Museum Studies and a PhD in History. A specialist in the Victorian period, she is the author of *Consuming Angels: Advertising and Victorian Women*. Generally, she writes about things in nineteenth-century Britain. A past Deputy Chair and Associate Chair (Graduate) of the History Department, she is currently MA Coordinator. She teaches courses in nineteenth and twentieth-century British history, Victorian material culture and the English country house.
- Jaime Malic
BA (Hons), MA,
BEd, PhD
- Jaime Malic recently completed her PhD in Educational Leadership and Policy at the Ontario Institute for Studies in Education at the University of Toronto. Her research focused on leadership values and practices in independent schools in Ontario. Jaime has more than ten years of experience as an educator in both independent and public schools. She currently teaches AP Capstone Seminar and senior English courses at St. Clement's School. Jaime has served as both a Reader for AP Capstone Seminar and a writer on the Item-Writing Committee for the Ontario Secondary School Literacy Test. She has written for *Independent Teacher* and presented on various topics at the Conference of Independent Teachers of English Annual Conference, the Ontario Advanced Placement Administration Conference, and the Advanced Placement Annual Conference.
- William J. McCausland
BAsC, MEng, MA,
PhD
- William McCausland is an associate professor of economics at the Université de Montréal. His research applies Bayesian statistical methods in two main areas. The first is discrete choice, at the interface of economics and psychology, where researchers study how people make choices from a small menu of available options. The second is time series modelling in economics, which has many applications in macroeconomics and financial economics. His undergraduate studies were in Engineering and he received his Ph.D. degree in economics from the University of Minnesota.
- Kate Schumaker
MSW, PhD
- Kate Schumaker is the Manager of Quality Assurance & Outcome Measurement at the Catholic Children's Aid Society of Toronto, and holds the position of Assistant Professor (status only) at the Factor Inwentash Faculty of Social Work, University of Toronto. She has worked for over 20 years in child welfare and children's mental health, including front-line clinical positions and 10 years producing and implementing child welfare policy for the provincial government. In 2011-12 she worked for the Commission to Promote Sustainable Child Welfare, supporting accountability framework development, including the establishment of a set of standardized performance indicators for the child welfare sector in Ontario. Her areas of practice and research interest include poverty, child neglect, trauma-informed practice, child welfare decision-making, and evidence-informed policy and practice.

Michael
Simmonds

BPE, M.A., Dip.
Ed., MEd, EdD

Michael Simmonds has worked in independent schools for over two decades. He taught science, biology, chemistry, physics, and math before becoming an administrator and Head of School. He earned graduate degrees from both McGill and Columbia universities respectively before receiving his doctorate from the University of British Columbia in Educational Policy & Leadership. His work on accountability synopticism is published in the peer-reviewed, *The International Education Journal: Comparative Perspectives*. He currently works at Havergal College as the VP School Life, Operations & Student Wellness.

Alumni Editors

Nick Bethlenfalvy is a second-year student in Trinity College at the University of Toronto. He graduated from Royal St. George's College in 2018. His studies included the two year AP Capstone program, which involved AP Research where he analyzed the root causes of rising pedestrian fatalities in Toronto. After taking the Ethics, Society and Law stream in the Margaret MacMillan Trinity One Program, Nick hopes to pursue an undergraduate degree in Economics.

Ryan Hamilton is studying history at the University of Toronto, where he graduated from the Pearson Stream of the Vic One program. He is also a graduate of the AP Capstone program at Royal St. George's College in Toronto, where his research focused on a Canadian battalion in the First World War.

William Howard-Waddingham is a student at Yale University studying political science with a concentration in human rights. He works as a research assistant with Professor Ryan Thoreson at the Yale Law School's Schell Centre for International Human Rights. In this role, he has conducted research on the ineffectual nature of incarceration for punishing those who non-violently discriminate against LGBTQ people, and how such incarceration is a human rights abuse in and of itself. William is passionate about social justice, equality, and international politics. These passions extend to his extracurricular activities. He serves as a researcher for the Policy Accountability Project with the Yale Undergraduate Legal Aid Association. This project is intended to document cases of police brutality in Connecticut, and strives to support victims by holding officers accountable for their actions. He is also involved with the Yale International Relations Association and the Yale Review of International Studies, where he runs the Europe desk and is an editor for YRIS's academic journal.

Pearse O'Malley is a 2018 graduate of Royal St. George's College and current second-year student at the University of Toronto studying Neuroscience. In addition to his responsibilities as a student, he is a research assistant at The Hospital for Sick Children in Toronto, where he works on data collection and curation for studies conducted by The Canadian Children Inflammatory Bowel Disease Network (CIDCaNN). On campus, he is involved in Women in Science and Engineering and Hemoglobal, both organizations that seek to increase the representation of minority groups in the fields of STEM and within research study cohorts. Pearse aspires to a career in healthcare and is primarily interested in primary care, women's rights, and education.

Guidelines for Contributors

The Young Researcher is a peer-reviewed journal dedicated to publishing the best original research from secondary school students.

The journal's mission is to provide a larger audience for the original academic research of ambitious secondary students, provide a forum for peer-review, and create a community of young researchers. In addition, the journal strives to advance the quality of academic writing in secondary schools.

The Young Researcher is edited by secondary school students working closely with scholars and active researchers at universities and in the community. The journal operates a blind peer-reviewed review process, following those found in academic research journals.

The journal encourages submissions of original research (including relevant replication studies) from a wide range of academic disciplines within the social sciences, humanities, and sciences.

Submission Guidance:

- No more than 5,000 words, excluding references and appendices (in English)

- Articles should have the following sections or equivalent:

Introduction

Literature Review

Method, Process, or Approach

Findings or Results

Discussion, Analysis, and/or Evaluation

Conclusion and Future Directions

References

- Papers should be formatted using discipline-appropriate methods (MLA, APA, and Chicago are acceptable).

- Papers should have an abstract (no more than 150 words) and have 4-6 keywords

- All units of measurement should be in metric wherever possible

- All studies involving human participants must have been approved by a Research Ethics Board

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Since the journal publishes original research, by submitting your work you affirm that it is yours, that it is free from issues of academic dishonesty, and that it has not been submitted elsewhere.

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