PRESIDENT HARVEY G. STENGER, THE BINGHAMTON UNIVERSITY COUNCIL, FACULTY, ALUMNI AND STUDENTS OF BINGHAMTON UNIVERSITY, STATE UNIVERSITY OF NEW YORK, ARE HONORED BY YOUR PRESENCE AT SPRING 2021 COMMENCEMENT.
GRADUATES, PARENTS AND FRIENDS:

Commencement is always the highlight of the academic year, especially for the students we are honoring, but also for their friends and family who supported them on their educational path. Faculty and staff, too, share in the excitement that Commencement inspires.

The Class of 2021 has had a college experience virtually unparalleled in the University’s history. COVID-19 interrupted the rhythms and rituals of the academic year, sending students home and requiring the mastery of new remote learning skills. The members of the Class of 2021 proved resilient and capable and have reached the culmination of their academic careers at Binghamton, stronger for the obstacles they have had to overcome.

Our graduates have gained the experiences and knowledge that their careers and future engagements will demand of them. Ours is a campus where students learn by doing, and our graduates have already proven themselves — winning prestigious case competitions and grants, publishing papers that have gained acclaim from scientists and scholars, and bettering their communities through hands-on internships and practicums.

Outside the classroom, they have embraced their responsibilities as active members of the community. They’ve raised funds to combat deadly disease, provided food for the hungry, taught younger students in local schools and traveled across the globe to work with and learn from their international peers. Our graduates have learned the practical, technical and professional skills that will enable success throughout their careers.

But, most important, Binghamton University has provided the foundation in the liberal arts and participation in a diverse and international student body that gives all our students the understanding and perspectives they need to address the challenges we face in society today and in the coming decades.

We saw this most clearly over the past year, as the Class of 2021 stepped up to the challenges posed by a world-wide pandemic, and their response will serve as an example for future classes — diving into the challenges of remote learning, designing 3D-printed nozzles for much-needed respirators, volunteering for COVID-testing sites and bringing food to isolated members of the community. Throughout, the Class of 2021 has risen to the moment.

So let’s applaud the achievements of a remarkable group of students and recognize the many faculty and staff who helped guide, mentor and challenge them. And most of all, let us celebrate the families and friends whose support was crucial in this most challenging year.

Again, I congratulate our graduates. As scholars and engaged citizens, they are now ready to apply their talents “in the real world.” I know that whatever the future holds for them, they leave Binghamton with a strong foundation for success.

It has been a pleasure to witness the achievements of the Class of 2021. Graduates, thank you for choosing Binghamton University and I hope that you will remain engaged with your alma mater.

Sincerely,

Harvey G. Stenger
President
This page in the Commencement program isn’t large enough to list all of the challenges you’ve been through since last March. Although the past 14 months have been difficult and the future can never be certain, there is one very positive point to focus on: You persevered and graduated! I’m incredibly proud of you and what you’ve accomplished, and I hope you feel tremendous pride as well.

Did you know that when you graduate, you automatically become a member of the Alumni Association? You’re now part of a powerful network of more than 143,000 people around the world. And it’s a resource you can tap into for your entire lifetime. Moving to a new city? Reach out to Binghamton alumni. Looking to change jobs or careers? Reach out to Binghamton alumni. Networking is one of the most important skills you can develop, and it can pay off immensely.

We have many ways you can stay connected to the University and other alumni. Once the celebrations are done and you have some down time, check out our pages on Facebook, Twitter and Instagram, and be sure to join the Alumni Association’s LinkedIn group. Keep your personal information up to date in the online alumni directory so you’re always in the loop about alumni events in your area. All of these are available through binghamton.edu/alumni.

Don’t forget to join us in October for Homecoming. Whenever you’re on campus, make the Alumni Center the first place you visit.

Congratulations on all you’ve accomplished at Binghamton University! I’m excited for you beyond words, and hope you’ll stay connected with us. Wherever you go, Binghamton is always a part of you, and you’re always a part of Binghamton.

Kimberly Faber
Executive Director of Alumni Engagement
VIRTUAL COMMENCEMENT

THURSDAY, MAY 13, 2021

GRAND MARSHAL
Jill Dixon, Associate University Librarian for Public Services & Collections, Chair, Faculty Senate

PLATFORM PARTY
Harvey G. Stenger, President
Linda H. Biemer, Binghamton University Council
Laura R. Bronstein, Dean, College of Community and Public Affairs
Mary Beth Curtin, Associate Vice President for Research, Alumni Association Representative
Gregory Delviscio, Vice President for Communications and Marketing
Upinder S. Dhillon, Dean, School of Management
Jill Dixon, Grand Marshal, Associate University Librarian for Public Services & Collections, Chair, Faculty Senate
Sheila E. Doyle, Executive Director, Binghamton University Foundation
Zachary Herz, Student Representative, Binghamton University Council
Karen A. Jones, Vice President for Diversity, Equity and Inclusion
Curtis Kendrick, Dean of Libraries
Celia M. Klin, Interim Dean, Harpur College of Arts and Sciences, Professor, Psychology
John C. Koch, Vice President for Advancement
Kathryn Grant Madigan, Esq., Chair, Binghamton University Council
Pamela A. Mischen, Platform Party Marshal, Associate Professor, Public Administration, Faculty Advisor to the President
JoAnn J. Navarro ’93, MBA ’02, Vice President for Operations
Donald G. Nieman, Executive Vice President for Academic Affairs and Provost, Interim Dean, Graduate School
Mario R. Ortiz, Dean, Decker College of Nursing and Health Sciences
Brian T. Rose, Vice President for Student Affairs
Bahgat Sammakia, Vice President for Research, Distinguished Professor, Mechanical Engineering
Krishnaswami Srihari, Dean, Thomas J. Watson College of Engineering and Applied Science, Distinguished Professor, Systems Science and Industrial Engineering
Maureen D. Wilson, Binghamton University Council
ORDER OF EXERCISES

CEREMONY OPENING
Grand Marshal Dixon

NATIONAL ANTHEM
“The Star-Spangled Banner,”
John Stafford Smith, arr. Daniel Fabricius
Vocal performance by Kelsey Watts

PRESIDENT’S REMARKS
Harvey G. Stenger

PROVOST’S REMARKS
Donald G. Nieman

ALUMNI ASSOCIATION REMARKS
Mary Beth Curtin

PRESENTATION OF CANDIDATES FOR DEGREES
Provost Nieman

CONFERRING OF DEGREES
President Stenger

ALMA MATER
“In the Rolling Hills of Binghamton,” words by
Xin Engel, music by David Engel ’86, arr. Daniel
Fabricius (lyrics on the back cover)
Vocal performance by Kelsey Watts

CEREMONY CLOSING
Grand Marshal Dixon

PRESENTATION OF GRADUATES
“Pomp and Circumstance,” Theme from “March
No. 1,” Edward Elgar, arr. Clare Grundman
(edited for adaptable band by Daniel Fabricius)

DISTINGUISHED DISSERTATION AWARDS

Jonathan S. Jones
“Opium Slavery: Veterans and Addiction in the American Civil War Era”
History: Prof. Diane M. Sommerville

Hongya Lu
“Real-Time Stencil Printing Process Enhancement Using Online Learning and Guided Search Optimization”
Systems Science and Industrial Engineering: Prof. Sang Won Yoon

Odilka Sabrina Santiago
“From Jim Crow to Jane Crow: Policing Black and Brown Women and Families in NYC Homeless Shelters”
Sociology: Prof. Gladys M. Jiménez-Muñoz

Chao Zhou
“Toward High-Quality, Bandwidth-Efficient 360-Degree Video Streaming”
Computer Science: Prof. Yao Liu

BINGHAMTON UNIVERSITY
WIND SYMPHONY
Conductor — Daniel Fabricius

“STAR-SPANGLED BANNER” AND ALMA MATER
Vocal solo — Kelsey Watts
Flute — Mary Campbell
Clarinet 1 — Carrie Hathaway
Clarinet 2 — Julia Rubino
Bass clarinet — Tyler Seccafo
Trumpet 1 — Paul Barber
Trumpet 2 — Richard Mellia
Horn — Justin Kersh
Trombone 1 — Calvin Wetzel
Trombone 2 — Greg Wolosen
Tuba — Brianna Palumbo
Percussion — Leif Haley

“POMP AND CIRCUMSTANCE”
Flute — Mary Campbell
Oboe — Tess Telang
Clarinet 1 — Carrie Hathaway
Clarinet 2 — Julia Rubino
Bass clarinet — Tyler Seccafo
Alto saxophone — Shannon Doherty
Trumpet 1 — Paul Barber
Trumpet 2 — Richard Mellia
Horn — Joe Kovan
Trombone 1 — Calvin Wetzel
Trombone 2 — Greg Wolosen
Tuba — Brianna Palumbo
CANDIDATES FOR DOCTORAL DEGREES

Lubna Ahmad Abdul-Hadi*
“Translation, Transgression, and Transmutation: Annihilating the ‘XX+XX=XX’ Body”
Translation Studies: Prof. Joshua M. Price

Innocent Ooga Achari
“Synthesis, Characterization and Application of Thin Films of Platinum, Palladium and alloys for Formic Acid Fuel Cells Applications”
Chemistry: Prof. Nikolay Dimitrov

Alan Adelman
“Three Essays on the Economics of the Elderly”
Economics: Prof. Hwan-sik Choi

Ahmad Khaleel Al Khabbas*
“Permanant Trauma: A Reading of Dima Wannous’ The Frightened Ones and Ibtisam Teresa’s Cities of Pigeons”
Comparative Literature: Prof. Luiza F. Moreira

Mohammed Ameen Abdulqader Aladeen
“New Algorithms for Simultaneous Feature Selection and Support Vector Machines Hyperparameters Optimization”
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Ahmad K. Alahmari*
“Introducing Passing Into Arabic Through Translation: Passing and Taqiya as Comparable Sociological Phenomena”
Translation Studies: Prof. Michael J. Pettid

Shrouq Mohammad Ali Alelaumi
“Intelligent Control System for Adaptive Decision Making of Stencil Cleaning Operation in Surface Mounting Technology”
Systems Science and Industrial Engineering: Prof. Sang Won Yoon

Nojoud AlHarbi†
“Cyberbullying: Adaptation Experiences and Impact on Self-esteem as Described by Young Women in the Kingdom of Saudi Arabia”
Nursing: Prof. Pamela Stewart Fahs

Mariam Saad Alkobaisi*
“Constructions of White and Black Masculinity in the Antebellum American Novels and an Introduction to the New Man”
Comparative Literature: Prof. Luiza F. Moreira

Abdelkarim Mahmoud Allababneh*
“Ideology, Otherness and Translation Choices in Political Conflict: Case Study on Translating Rabinyan’s All the Rivers from English Into Arabic”
Translation Studies: Prof. Joshua M. Price

Khalid Bandar Almasloukh
“Quality of Life of Cancer Survivors and Equine Assisted Activities and Therapies”
Nursing: Prof. Pamela Stewart Fahs

Ali Mohammad A. Alshhre
“Saudi Arabian Female Writers: Representation of Saudi Arabian National Literature to World Literature”
Comparative Literature: Prof. Luiza F. Moreira

Aljazi Alsultan*
“Transfiction: Conceptualizing Translation Through Fiction a Study of Fawaz Haddad’s The Traitorous Translator”
Translation Studies: Prof. Michael J. Pettid

Ana’am S. Alzu’bi
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Zarin Tasnim Anika
“Evaluating the Role of Government Agencies vis a vis Private Sector Organizations and NGOs During a Crisis Response: A Case Study of the SARS-CoV-2 Pandemic Response”
Systems Science and Industrial Engineering: Prof. Nagendra N. Nagarur

Khalid Y. A. Aram
“Max-margin Cost-sensitive Feature Selection for Support Vector Machines”
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Ali Mohammed A. Asiri
“The Franklin Books Program: Translation and the Projection of the American Soft Power in the Cold War”
Translation Studies: Prof. Tarek Shamma

Oluwabusayo Adebanjo Awuronse*
“Decomposition-Driven Fast Network Modeling for Image-Based Production Process Monitoring”
Systems Science and Industrial Engineering: Prof. Changqing Cheng

Farshad Azadian
Electrical and Computer Engineering: Prof. Alok C. Rastogi

Yongshu Bai
“Achieving User-Oriented Efficient and Scalable Cloud Computing with Edge Assistance”
Computer Science: Prof. Yifan Zhang

Burak Basaranlar**
“Unifying the Nation, Entrenchment of the State: Violence, Identity, and State Making in Dersim and Eastern Thrace During the Early Republican Era of Turkey 1923-1950”
History: Prof. Kent F. Schull

Farhan Batieha**
“Analysis of a Multi-Pick and Place Machine-Flexible Manufacturing Cell Using Stochastic Modeling and Simulation”
Systems Science and Industrial Engineering: Prof. Nagendra N. Nagarur

Gissella Maria Bejarano Nicho
“Machine Learning Models for Designing Smart Cities and Communities”
Computer Science: Prof. Arti Ramesh

Angel M. Beltre†
“Design and Implementation of a Multi-Fair Framework for Microservices and HPC Workloads on Cloud Infrastructures”
Computer Science: Prof. Madhusudhan Govindaraju

Jill Marie Bennedum**
“Rural Elementary Special Education Teacher Retention and the Relationship to Administrative Support”
Education: Prof. Loretta M. Mason-Williams

Olga L. Blomgren**
“Reading Dangerously: Cannibalizing Languages, Creolizing Texts, and Archipelagic Thinking in Writings by Rosario Ferre and Edwidge Danticat”
Comparative Literature: Prof. Gisela Brinker-Gabler

Summer Blaze Bottini*
“On Selecting How to Implement Discrete Trial Training: A Comparison of Massed Trial and Task Interspersal”
Psychology: Prof. Raymond G. Romanczyk

Laura Burnham Bradgon*
“Taking a Closer Look at Incompleteness: An Investigation of Visuospatial Processing”
Psychology: Prof. Meredith E. Coles

Nikita Brodyagin
“Synthetic Modifications of Peptide Nucleic Acids for Enhanced Recognition of Double-Stranded RNA and Improved Cellular Uptake”
Chemistry: Prof. Eriks Rozners
Victoria Leigh Brown
“Precarious Seasons: Agrocapitalism, Social Reproduction, and Women’s Livelihoods in Spain’s Mar de Plastico”
Anthropology: Prof. Carmen Ferradas

Sean Cashed Bustard Berthold
“A Physiology of Healthy Recognition: Improving Axel Honneth’s Diagnostic Account of Social Pathology through the Application of a Medical Heuristic Analogy”
Philosophy: Prof. Robert E. Guay

Jan Butora
“Statistical Models for Image Steganography: Explaining and Replacing Heuristics”
Electrical and Computer Engineering: Prof. Jessica Fridrich

Elif Cagis Arici**
“Interwar Pronatalism In Turkey: Its Formation, Discourse, and Institutions”
Sociology: Prof. Çağlar Keyder

Shun Cao
“Analysis and Simulation of Complex Social Systems”
Systems Science and Industrial Engineering: Prof. Hiroki Sayama

Nicole Elaine Chambers*
“Role of the Cholinergic Pedunculopontine Nucleus in Parkinsonian Motor Deficits and Dyskinesia in Hemi-Parkinsonian Rats”
Psychology: Prof. Christopher R. Bishop

Luis David Chanci Arango*
“Essays on Applied Econometrics”
Economics: Prof. Sobal C. Kumbhalkar

Shensheng Chen**
“Mesoscale Modeling of Polymer Gels and Polymer Nanocomposites”
Mechanical Engineering: Prof. Xin Yong

Xiao Chen
“Improving Speaker Verification in Reverberant Environments”
Electrical and Computer Engineering: Prof. Stephen Zahorian

Qinghui Cheng**
“Characterization of the Ab40 Fibrillation in the Presence of Membranes by Solid-State Nuclear Magnetic Resonance Spectroscopy”
Chemistry: Prof. Wei Qiang

Tak Ian Chio**
“Bioligand Applications of Boron-Assisted Condensation Between Ortho-Carbonylphenylboronic Acids and Hydrazide Derivatives”
Chemistry: Prof. Susan Bane

Suhas Chivukula
“Addressing Global Manufacturing Outsourcing Problems Using a Hybrid AHP-TCO Model”
Systems Science and Industrial Engineering: Prof. Daryl Santos

Denis Chuvilkin**
“The History of Night: Nocturnal Goddesses in European Myth, Literature, and Culture from Late Antiquity to the Early Modern Period”
Comparative Literature: Prof. Olivia W. Holmes

Lindsey Collins*
“Developing a Growth Chart of Ritualistic Behaviors in Childhood: Age-Trends and Factors Associated with Deviation”
Psychology: Prof. Meredith E. Coles

Tiffani Amelia Crippin*
“The Political Economy of Child Labor: Urban Society, Rural Communities, and the Case of Sub-Saharan Africa”
Political Science: Prof. David H. Clark

Heying Cui
“Mechanistic Insights into Activation of the Dynen Adaptor Drosophila Bicaudal D”
Chemistry: Prof. Sozanne Solmaz

Meysam Daechin**
“A Capacitive MEMS Accelerometer Based on Repulsive Force”
Mechanical Engineering: Prof. Shahraz Towfighian

Nasim Darouie Haghigh*
“Image and Identity in Autobiographical Novels of Gertrude Stein, Marguerite Duras, and Marjane Satrapi”
Comparative Literature: Prof. Brett S. Levinson

Daniel Cunha
Sociology: Prof. Çağlar Keyder

Jennifer A. DeGregorio
“What to Wear Out”
English: Prof. Leslie Heywood

Kate Lynn DeRosa
“Y-chromosome Analysis of the Austronesian and Non-Austronesian Speakers of Bougainville, New Britain, and New Ireland”
Anthropology: Prof. D. Andrew Merriwether

Giovanni Maria Dettori
“Sardinian and Corsican Literature: Minority Literatures and Identities in Two Western Mediterranean Islands”
Comparative Literature: Prof. Giovanna Montenegro

Moses Santonio Dixon**
“Black College Closure, Economic and Social Impacts on a Community: The Case of Concordia College, Selma, Alabama”
Community and Public Affairs: Prof. Miesha T. Marzell

Christopher Matthew Dmuchowski**
“Nano-scale Experimental Study of the Mechanical Properties of Carbon and Boron Nitride Nanotubes Based Nanocomposites”
Materials Science and Engineering: Prof. Changhong Ke

Jessica R. Domino
“Missing Magmas: An Interdisciplinary Study Investigating the Fate of Fluids in the Flat Slab Region of Central Chile”
Geological Sciences: Prof. Alex Nikulin and Prof. H. Richard Naslund

Jenn Elizabeth Dum*
“Dimensions of Educational Justice: Practices, Reciprocity, and Individual Development”
Philosophy: Prof. Robert E. Guay

Ali Arda Eker**
“High-Performance Parallel Discrete Event Simulation on Knights Landing Processors”
Computer Science: Prof. Dmitry V. Ponomarev

Asala Nabeel Ata Erekat
“A Robust Semi-Supervised Learning Framework for Predicting Breast Cancer Recurrence”
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Rukayat Ayomide Erinfolami**
“Robust and Comprehensive Class Hierarchy Inference Engine for Optimized COTS C++ Binaries”
Computer Science: Prof. Aravind Prakash

Olga David Escanilla
“Chemosensory Convergence in Brainstem Structures: Effect of Retronasal Odorants to Taste Responses in the NTS and PbN in Awake, Freely Licking Rats”
Psychology: Prof. Patricia Di Lorenzo

Charles Matthew Evans*
“Spectral Properties of Commutative BCK-Algebras”
Mathematical Sciences: Prof. Fernando Guzman

James Evans*
“Effects of Hypnosis, Suggestion, and Implementation Intention Instructions on Mystical-Type Experiences: A Replication and Extension”
Psychology: Prof. Steven J. Lynn

Mark Fabiano*
English (awarded posthumously)
Hamid Fallahdoost
“Transient Liquid Phase Bonding Technology of Bi-Ni System for High-Temperature Electronics”
Materials Science and Engineering: Prof. Junghyun Cho

Kaiming Fang**
Computer Science: Prof. Guanhua Yan

Rushui Fang
“Advanced Analysis and Design of Quantum Systems with Entangled Photons”
Electrical and Computer Engineering: Prof. Vladimir Nikulin

Yuan Fang*
“Model-Based Clustering Approaches for Non-Gaussian Data”
Mathematical Sciences: Prof. Sanjeena Dang

Salma Abdulaurof Y. Felimban
“Employing Translation in Learning Arabic as a Foreign Language: Perspectives and Learning Strategies”
Translation Studies: Prof. Michael J. Pettid

Jessica Lyn Femiani
“At the Foot of a Volcano”
English: Prof. Joseph Weil

Elizabeth Cope Feurer*
“Attentional Biases and Individual Differences in Adolescent Reactivity”
Psychology: Prof. Brandon E. Gibb

Annemarie Fischer**
“What’s Next Beyond the Text? To the World It May Concern. A Cyber Narratology of Global News”
Comparative Literature: Prof. Gisela Brinker-Gabler

Rachel Anya Dearie Fomalhaut*
“Affective Representation of Loss in Late Twentieth-Century Multi-Cultural Women’s Fiction, with a Framework for Affective Pedagogy”
English: Prof. Elizabeth Tucker

Ashley Jo Frantellizzi
“Female First-Generation Doctoral Students in Science, Engineering, and Health Fields: Opportunities and Experiences”
Education: Prof. Marla Mallette

Julien Avelino Viel
“Synthesis and Biological Activity of Amide-Linked RNA”
Chemistry: Prof. Eriks Rozners

Christine E. Gallagher
“Loving Kindness Meditation and the Cultivation of Mindful Behaviors: Examining the Relationship Between Loving Kindness Meditation and the Five Facets Of Mindfulness”
Education: Prof. Scott Grant

Jiani Gao
“Three Essays on Labor Economics”
Economics: Prof. Solomon W. Polachek

Adriano Garcia*
“High-Speed Vision-Based Autonomous Indoor Quadrator Navigation”
Computer Science: Prof. Kanad Ghose

Ashwin Gautam
“Can Imagined Placebos Produce Analgesic Effects?”
Psychology: Prof. Steven J. Lynn

Huayan Geng
“New Approaches to Estimate Treatment Effects of Policy Interventions Using Panel Data”
Economics: Prof. Wei Xiao

Aref Ghafoouri
“Implementing Inkjet-Electrospray: Bulk and Interfacial Transport in Evaporating Sessile Droplets and Printed Rivulets”
Mechanical Engineering: Prof. Paul R. Chiarelli

Saptarshi Ghosh
“Structure-Stability Studies of the Reaction Between Ortho-Carbonyl Phenylboronic Acids and Hydrazides for Bioorthogonal Applications”
Chemistry: Prof. Susan Bane

Ioannis Giannakis**
“Emergence of Kondo Lattice Behaviour Inside the Magnetic Phase of U-Based Heavy Fermions”
Physics, Applied Physics and Astronomy: Prof. Pegor Aryanian

Stephen Gilbert Gonya
“Direct-Write Additively Printed Electronics for 3D Electromagnetic Structures and Radio-Frequency Applications”
Systems Science and Industrial Engineering: Prof. Mark Polkis

Addie G. Gordon
“Imaging Pilgrimage: Monumental Iconographies of Cultural Policy and Revitalization at the Cidade da Cultura de Galicia Art”
Art History: Prof. Pamela G. Smart

Marcin Grodzki
“The Axionormative Order of Science: Scientific Exploration and the Making of New Organic Solidarity Among Intellectuals”
Sociology: Prof. Frederic Deyo

Ariel M. Gruenthal-Rankin
“Dietary Dimensions of Early-Life Stress in Medieval Prussia”
Anthropology: Prof. Elizabeth DiGangi

Jie Guo*
“Conceptualization and Effect of Unintended Leader Hostility: A Perceptual Approach”
Management: Prof. Shelley D. Dionne

Paramarz Hadian**
Physics, Applied Physics and Astronomy: Prof. Eric J. Cotts

Lida Haghnegahdar*
“Enabling Smart Grid Communications and Network Reliability with Decentralized Technology Modeling and Cyber Security Analysis”
Systems Science and Industrial Engineering: Prof. Yong Wang

Morteza Haji Bagheri**
“Investigation of Water Adsorption on Graphene”
Mechanical Engineering: Prof. Scott N. Schifferres

Farouq Halawa
“Integrated Framework of Process Mining and Simulation-Optimization for Evidence-Based Healthcare Facility Design”
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Frances W. Harrison*
“The Impact of Europeanization and Securitization on Refugees, Labor Migrants, and Soldiers in Lithuania”
Anthropology: Prof. Thomas M. Wilson

Alexander Michael Haruk*
“Effects of Nanoscale Confinement on the Growth of Organic Semiconductors”
Chemistry: Prof. Alistair Lees

Lu He**
“Optimization of Inpatient Bed Management Considering Patient Flow and Length of Stay Prediction”
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Marc Francis V. Hidalgo*
“Factors Affecting the Thermal Stability and Electrochemical Performance of Various LiVOPO4 Polymorphs”
Materials Science and Engineering: Prof. M. S. Whittingham

Zhezi Hou*
“Essays on Production Economics”
Economics: Prof. Subal C. Kumbhakar

*Degree awarded summer 2020 | **Degree awarded fall 2020 | ***Degree awarded winter 2021 | † Degree anticipated to be awarded after spring 2021
Kenneth J. Houghton*
“Readers’ Processing of Narrative Perspective: An Investigation of the Role of Grammatical Person and Focalization”
Psychology: Prof. Celia M. Klin

Jonathan Chi-Yun Hui*
“Electrostatic Preclusion of Bubble Contact in a Microchannel: A Multiphysics Computational Approach with a Predictive Model on Contact Preclusion of Oversized Bubbles”
Mechanical Engineering: Prof. Pong-Yu Huang

Carmita Eliza De Jesus Icasiano**
“PastForward: Philippine Likhang-Bayan as Intangible Cultural Heritage”
Anthropology: Prof. Pamela G. Smart

Jonathan S. Jones*
“Opium Slavery: Veterans and Addiction in the American Civil War Era”
History: Prof. Diane M. Sommerville

Chungse Jung**
“The Age of Protest: World-Historical Structure and Dynamics of Protest Waves in the Global South in the Long Twentieth Century”
Sociology: Prof. William G. Martin

Taylor Rose Juran*
“A Computational Study of Multivalent Ion Batteries for Sustainable Energy Storage”
Physics, Applied Physics and Astronomy: Prof. Manuel Smeu

Carol Mae Kaplan**
Chemistry: Prof. M. S. Whittingham

Sibel Karakoc
History: Prof. Kent F. Schull

Soujanya Sathyanarayana Karanth
“Angiopoietins for Islet development from Induced Pluripotent Stem Cells”
Biomedical Engineering: Prof. Sha Jin

Bahman Khaki Novel
“Control Methods for Optimized Operation of Redox Flow Batteries”
Electrical and Computer Engineering: Prof. Pritam Das

Chulki Kim**
“Economy and Empire in Making the British-Irish Union, 1756-1801”
History: Prof. Heather Welland

Andria Lara Kroner
“Influences of Genetics, Geographic Distribution and Early Rearing Environment on the Vocal Repertoire of the Ága (Mariana Crow - Corvus kubaryj)”
Biological Sciences: Prof. Anne Clark

Yunus Kucuk*
“Robust Classification of Portable Executable Malware”
Computer Science: Prof. Guanhua Yan

Rebekah Kukowsky**
Community and Public Affairs: Prof. Suk-Young Kang

Adita Abhay Kulkarni*
“Model-Based and Machine Learning Approaches for Future Internet Systems”
Computer Science: Prof. Anand Seetharam

Yui Law
“Three Essays on Economic Expectations”
Economics: Prof. Wei Xiao

Zachary Walter Lebens-Higgins**
“Identifying the Bulk Redox Mechanisms in Layered Oxide Cathodes Throughout Delithiation”
Physics, Applied Physics and Astronomy: Prof. Louis F. Piper

In Gyu Lee
“Optimization-Based Machine Learning for Robust and Cost-Effective Feature Selection for Medical Diagnosis”
Systems Science and Industrial Engineering: Prof. Sang Won Yoon

Justine Lindsey Lewis**
“Examining the Role of Social Capital in Refugee Integration: Supporting Research-Based Policy and Practice in the United States”
Community and Public Affairs: Prof. Kimberly C. Brinham

Borui Li**
“Wrist in Motion: Continuous Authentication via Hand Motions While Clicking and Typing”
Electrical and Computer Engineering: Prof. Zhiang Jian

Can Li
“Synthesis and Manipulation of Surface-Engineered Metal Alloy Nanocrystals for Enhancing Their Catalytic Properties”
Chemistry: Prof. Jiyé (James) Fang

Kexuan Li
“On the Characteristics of the Generalized Shiryaev-Roberts Procedure for Quickest Change-Point Detection in Continuous Time”
Mathematical Sciences: Prof. Alexsey Polunchenko

Yuanyuan Li
“Fatty Acid Tastes in Drosophila Melanogaster”
Biological Sciences: Prof. Pavel Masek

Sebastian Lippez De Castro
Community and Public Affairs: Prof. Nadia Rabaii

Zachary William Lipsky
“The Degradative Effects of Photodamage and Microbiome Imbalances on the Multi-Scale Physical Properties of Human Skin”
Biomedical Engineering: Prof. Gay K. German

Lin Liu
“Performance Enhancement of Miniature Microbial Solar Cells”
Electrical and Computer Engineering: Prof. Seokheun (Sean) Choi

Ruiyang Liu**
“Aging of Polymer Adhesives and its Reliability Impacts to Electronics Packaging”
Mechanical Engineering: Prof. Seungbae Park

Zhao Liu*
“Simulation Based Transient Stability Assessment and Reinforcement Learning-Based Emergency Control for Power”
Electrical and Computer Engineering: Prof. Zhiang Zhang

Hongya Lu**
“Real-Time Stencil Printing Process Enhancement Using Online Learning and Guided Search Optimization”
Systems Science and Industrial Engineering: Prof. Sang Won Yoon

Yiliang (Yancy) Luan
“Kinetically Shape-Controlled Syntheses of Pt-based Bimetallic Nanocrystals and Their Structure Evolution in the Presence of Carbon Monoxide”
Chemistry: Prof. Alistair Lees

Juliet Muthoni Macharia*
“Mechanistic Studies of Novel Organic Reactions and Development of New Synthetic Methods”
Chemistry: Prof. Mathew J. Vetticatt
Matthew David Redell*  
“Engineering Correlation and Topological Effects in Transition Metal Oxides”  
Physics, Applied Physics and Astronomy: Prof. Wei-Cheng Lee

Catherine Murphy Rewakowski  
“Examining the Relationships Among Civic Attitudes, Civic Engagement Behaviors, and Sense of Community in a Sample of Nurses”  
Nursing: Prof. Gale Spencer

Linda M. Reynolds  
“An Examination of Athlete Status as a Moderator of Multiple Alcohol and Marijuana Use Relationships in College”  
Community and Public Affairs: Prof. Nadine Mastroleo

Kerry Clare O’Neill Roe  
“Poor Lo Has Dropped Out of Sight: Native Americans and the U.S. Imperial Project, 1898–1904”  
History: Prof. Wendy Wall

Siara Kate Rouzer  
“Age and Sex-specific CRF1-regulated GABAergic Activity in the Central Amygdala is Impaired by Moderate Prenatal Alcohol Exposure, Contributing to Inappropriate Anxiety-like Behavior in Adolescent Offspring”  
Psychology: Prof. Marvin Diaz

Runia Roy  
“Integrative Physiologic Pharmacodynamics: Using Biomarkers to Integrate Inflammatory Pathways in the Acute Gluocorticoid Drug Response and Diurnal Cortisol Response”  
Biomedical Engineering: Prof. Eric Hoffman

Tyler Jacob Rust  
“Characterization of Marine Mudstones: Towards a Statistical Approach to Interpreted XRF Data”  
Geological Sciences: Prof. Jeffrey Pietras

Rania Said*  
“Women’s Testimonies of the Arab Uprisings: Writing the Self and the City through Art”  
Comparative Literature: Prof. Luiza F. Moreira

Danielle Evelina St. Julien*  
“Locating the Black Middle Class: Race, Class, and Public Policy in the 1970s”  
History: Prof. Stephen R. Ortiz

Shane Joshua St. Luce  
“Analyzing the El Farol Bar Problem as a Complex Dynamical System”  
Systems Science and Industrial Engineering: Prof. Hiroki Sayama

Leila Salarpour Goodarzi  
“Three Chapters on Labor and Development Economics”  
Economics: Prof. Solomon W. Polachek

Hossein Sangroody**  
“Forecasting Models and Uncertainty Analysis for Power Consumption and Generation from Renewable Energy Sources”  
Electrical and Computer Engineering: Prof. Ning Zhou

Odilka Sabrina Santiago*  
“From Jim Crow to Jane Crow: Policing Black and Brown Women and Families in NYC Homeless Shelters”  
Sociology: Prof. Gladys M. Jiménez-Muñoz

Lynn Dee Schmitt*  
“Organic and Organometallic Anion Sensors: Design, Synthesis, and Function”  
Chemistry: Prof. Alistair Lees

Danielle Brooke Schwartz  
“Locating Popular Cinema: The Geopolitics of Transnational Film Practices”  
English: Prof. Monika Mehta

Wylie Erin Schwartz  
Art History: Prof. Tom McDonough

Abdulrahman Ahmed Shamsan  
“Real-Time Monitoring and Change Detect in Complex Dynamical Systems Using Nonlinear and Nonstationary Time-Series”  
Systems Science and Industrial Engineering: Prof. Hiroki Sayama

Molly Jules Shaughnessy*  
“Feeling Ashamed: A Parsesciencing Inquiry”  
Nursing: Prof. Mario Ortiz

Stuart Christopher Shepard  
“Modeling Conductance Variation Mechanisms in Single Molecule Juncitons”  
Physics, Applied Physics and Astronomy: Prof. Manuel Smou

Junyang Shi  
“Creating Self-Adaptive and Scalable Wireless Networks for Industrial Internet of Things”  
Computer Science: Prof. Mo Sha

Daniel Cheng Silliman  
“Investigating Caricature Effects Through an Adaptive Reference Point Model of Categorization”  
Psychology: Prof. Kenneth Kurtz

Melissa May Simonik**  
“Development and Application of Customized Parametric Finite Element Models of Medial Column Arthrodesis of the Foot”  
Mechanical Engineering: Prof. James M. Pitarresi

Christopher Nolan Singh*  
“Quantum Artificial Intelligence: Leveraging Microscopic Transport Phenomena for Beyond von Neumann Computing”  
Physics, Applied Physics and Astronomy: Prof. Wei-Cheng Lee

Sean Paul Snoddy  
“Improving and Re-Conceptualizing Analogical Transfer Through Categorization Inspired Approaches”  
Psychology: Prof. Kenneth Kurtz

Eve Catherine Snyder**  
“Title Wave: Civil Rights Education Policy as a Vehicle for Women’s Rights, 1944-1972”  
History: Prof. Kathryn K. Sklar

Maryam Soltanpour Gharibdousti  
“An Integrated Predictive-Optimization Framework to Design an Outcome-based Liver Allocation Model”  
Systems Science and Industrial Engineering: Prof. Mohammad T. Khasawneh

Christine Anne Sylvester**  
“(Con)Textual Politics: Intra-Party Issue Raising, Issue Emphasis, and Issue Adoption”  
Political Science: Prof. Robin Best

Mehdi Tahernia*  
“Papertronic Sensing Arrays for Rapid and High-Throughput Screening of Electroactive Microorganisms”  
Electrical and Computer Engineering: Prof. Seokheun Choi

Canan Tanir*  
“To Whom Does the Natural Come Naturally? Neoiberal Ideals of Motherhood in Turkey”  
Sociology: Prof. Mahua Sarkar

Christo Suheil Tarazi**  
“Essays on Using Artificial Intelligence to Answer Economic Questions”  
Economics: Prof. Wei Xiao

Shefa Mohammad Tawalbeh*  
“Leveraging Bioinformatics Techniques to Support Biomarker Studies in Pediatric Inflammatory Diseases”  
Biomedical Engineering: Prof. Yetrib Hathout
Marwan Kakl Tawfiq
“Translating Kurdish Idioms in Qazi’s Peshmerga: Exploring Sociosemiotic and Cognitive Approaches”
Translation Studies: Prof. Luiza F. Moreira

Danny Keith Thompson*
“Healthcare Cost Surveillance: Scanning for Clusters of Higher than Expected Cost”
Systems Science and Industrial Engineering: Prof. Sang Won Yoon

Natalia Triana Angel*
“Sounds of War: Salsa, City, and Conflict in the Cali Festival, 1957-1990”
History: Prof. Nancy P. Appelbaum

Aliona Tsypes*
“A Fine-Grained EEG/ERP Examination of Reward Processing in Suicide Attempters”
Psychology: Prof. Brandon E. Gibb

Wangshu Tu
“A Family of Logistic Normal Multinomial-Based Clustering Approaches for Microbiome Compositional Data”
Mathematical Sciences: Prof. Sanjeena Dang

Angela Kristin VandenBroek
“Disrupting StBlmTech: An Anthropological Guide to Stockholm’s Innovation and Startup Ecosystem”
Anthropology: Prof. Douglas R. Holmes

Alexandra L. Vizgaitis*
“Illuminating the Identity Disturbance Construct: Furthering Empirical Understanding of Identity Disturbance via Related Constructs”
Psychology: Prof. Mark F. Lenzenweger

Andrew Scott Vore
“Long-Lasting Changes in Ethanol Sensitivity and Blood Brain Barrier Function Following Adolescent Intermittent Ethanol”
Psychology: Prof. Terrence Deak

Crystal E. Vuole
“From Angry Militants to Happy Vegans: Animal Rights Activists’ Recasting for Vegan Recruitment”
Sociology: Prof. Benita Roth

Samantha A. Wagner†
“Challenging the OT = Good Assumption: Understanding the Role of Oxytocin in Marital Processes and Marital Quality”
Psychology: Prof. Richard E. Mattson

Victor Mulwa Wambua**
“Mechanism and Method Development in Catalytic Organic Reactions”
Chemistry: Prof. Mathew J. Vetticatt

Jialiu Wang
“Structure and functional studies of glutamate transporters EAAT”
Chemistry: Prof. Christof Grewer

Yi-Shu Wang**
Comparative Literature: Prof. Susan Strehle

Erica May Webster
“Childhood Resilience: The Role of Risk and Protective Factors”
Education: Prof. Nicole Fenty

Joseph Clarence Wilson
“Framing the Past (and Future): Effects of Generic Photos on Autobiographical Judgments”
Psychology: Prof. Deanne Westerman

Paul W. Woods
“Development and Function of Dual Species Biofilms of S. Aureus and P. Aeruginosa in Chronic Bronchiole Infections”
Biological Sciences: Prof. Claudia Marques

Jiefeng Xu**
“Electromigration Assessment and Prediction in 2nd Level Ball Grid Array”
Mechanical Engineering: Prof. Seunghae Park

Huiyuan Yang
“Exploring Multiple Cues for Facial Behavior Understanding”
Computer Science: Prof. Lijun Yin

Kai Wen Yang
“Capital Accumulation, Biopolitics and Anti-Displacement Struggles in Chinatown and the Lower East Side, New York City: 1965-Present”
Sociology: Prof. Gladys Jiménez-Muñoz

Ozge Yol**
“Second Language Writing in Mainstream Classrooms: A Survey Investigation of Teachers of English Language Learners’ Cognition and Reported Applications of Writing for ELLs”
Education: Prof. Hoe Kyeung Kim

Amanda Michelle Zdimal
“Biofilm Infections in Atherosclerosis: Investigating the Potential Role of Biofilm Bacteria in the Pathogenesis of Atherosclerosis”
Biological Sciences: Prof. David Davies

Ayse Zeren Enis
“Destitute Women Petitioning for Aid: Gender, Legitimacy and Rhetoric in the Hamidian Period (1876-1909)”
History: Prof. Kent F. Schull

Yue Zhang**
“Toward Learning Expressive Relational Models”
Computer Science: Prof. Arti Ramesh

Zheng Zhang*
“Multimodal Data Creation, Fusion, and Recognition of Action Units Using Deep Learning Models”
Computer Science: Prof. Lijun Yin

Chao Zhou
“Toward High-Quality, Bandwidth-Efficient 360-Degree Video Streaming”
Computer Science: Prof. Yao Liu

Shengsheng Zhou
“Where Has the Master Gone: A Post-translational Rendering of Pu Songling’s Liaozhai Zhiyi”
Translation Studies: Prof. Michael J. Pettid

Shibo Zhou**
“Deep Spiking Neural Network with Temporal Coding”
Electrical and Computer Engineering: Prof. Xiaohua E. Li

Yaqun Zhu*
“Additive Manufacturing Using Electrospay Printing of Nanoparticle Inks”
Chemical Engineering: Prof. Paul R. Chiarot

Michael Robert Ziembra
“Biomarkers in the Dystrophinopathies: Development for Pharmacodynamics and Clinical Outcomes”
Biomedical Engineering: Prof. Eric Hoffman

Mateusz Jan Zuba
“Investigation of Next Generation Cathodes in Terms of Their Local Chemistry”
Materials Science and Engineering: Prof. Louis F. Piper
Binghamton University opened its doors as Triple Cities College in 1946 to serve the needs of local veterans returning from service in World War II. Originally located in Endicott, five miles west of the present campus, the fledgling school was a branch of Syracuse University. Four years later, when the college was incorporated into the State University of New York, it was renamed Harpur College in honor of Robert Harpur, a Colonial teacher, patriot and pioneer who devoted his later years to settling the area around Binghamton.

Until 1953, Harpur College was one of only two public liberal arts colleges in the state. In 1961, the campus was moved across the Susquehanna River to Vestal. Growing enrollment and a reputation for excellence soon led to the selection of Harpur College as one of four doctorate-granting university centers in the state system. In 1965, the campus was formally designated the State University of New York at Binghamton. Binghamton University was adopted as its informal name in 1992.

Today, Binghamton University is known for the excellence of its students, faculty, staff and programs, and enrollment is more than 18,000 students in programs leading to bachelor’s, master’s and doctoral degrees. More than 14,200 students are undergraduates and more than 3,700 are graduate students. Its curriculum, founded on the liberal arts, has expanded to include selected professional and graduate programs, including the new Doctor of Pharmacy (PharmD) program launched in fall 2017, which is graduating its inaugural cohort this year.

The University offers more than 100 major degree programs across its academic divisions and is recognized as the most selective and prestigious university in the SUNY system. College guides such as the Fiske Guide to Colleges have dubbed Binghamton a “premier public university in the Northeast.” Students actively take part in internships, education-abroad programs, honors programs, Division I athletics and many of the 450+ student organizations on campus. They enjoy attractive, comfortable living-and-learning residences, and they give faculty high marks for being approachable and inspirational.

Binghamton’s faculty and students come from more than 100 countries, bringing with them many different cultures and backgrounds and representing a wealth of ideas. It has an excellent research library, outstanding computer facilities, a superb performing arts center, a teaching greenhouse, a 190-acre Nature Preserve, an Events Center and more.

Binghamton is a highly regarded research university, yet, at the same time, is as accessible as a smaller school. Retention is well above national averages, and more undergraduates are admitted into nationally ranked, rigorous graduate programs than is the norm nationally for public research universities.
ACADEMIC REGALIA

The shapes, colors and trim of gowns, hoods and caps indicate the academic degree, the school granting the degree and the subject of study. The higher the degree, the more elaborate the costume. Gowns are distinguished by the shape of the sleeves. Bachelors’ gowns have pointed sleeves, masters’ have sleeves cut square at the back and doctors’ gowns also have velvet facing and three velvet bars on the sleeves that are either black or a color indicating the degree: dark blue for philosophy; light blue for education; golden yellow for science; pink for music; orange for engineering; brown for fine arts; white for arts, letters and humanities; olive green for pharmacy; and copper for economics.

Hoods are distinguished by length, lined with the official color(s) of the conferring institution and trimmed with a color indicating the subject in which the degree is granted. Blue and gold, the color of the State University of New York, are in the hoods of all those who will receive a doctorate today, including honorary degree recipients.

The cap or mortarboard is black, with a long tassel that may be black or the color appropriate to the subject. Only doctors’ caps may have a tassel of gold thread. It is customary for graduates to move tassels from right to left after degrees are conferred.
ABOUT BINGHAMTON UNIVERSITY

INTERNATIONAL FLAGS

Binghamton University attracts students and scholars from across New York state, the country and the world. The international flags that hang in the Events Center during Commencement ceremonies and at other venues on campus during the academic year represent the more than 100 nations our students hail from. Flown since Commencement 1997, these flags are an important visual reminder that Binghamton University’s strength lies in its people who represent a great variety of cultures, backgrounds and ideas.

THE UNIVERSITY MACE

A gift of the Class of 1993, the University mace represents the magisterial authority of the University as an institution of higher learning. Such symbols go far back into antiquity, their use proclaiming the power of the holder. Today, the mace stands for the pre-eminence of the world of knowledge.

Professor John Thomson of the Department of Art and Design undertook the commission by the Class of 1993 for the University mace. Nearly three feet long, it is made of hand-turned, polished walnut. The spherical head has two inset cast-bronze facets in the shape of medallions. One bears the seal of Binghamton University. The other carries a high-relief rendering of Pegasus, the flying horse of Greek mythology, which as a part of the seal symbolizes the University’s aspirations for its future.
TRUSTEES, COUNCIL AND ADMINISTRATION

CHANCELLOR
James Malatras

STATE UNIVERSITY OF NEW YORK
BOARD OF TRUSTEES
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Bahgat Sammakia, Vice President for Research, Distinguished Professor, Mechanical Engineering
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Laura R. Bronstein, Dean, College of Community and Public Affairs
Upinder S. Dhillon, Dean, School of Management
Curtis Kendrick, Dean of Libraries, University Libraries

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GUEST INFORMATION

COVID-19 GUIDELINES
Remain at least 6 feet apart from others at all times. Do not remove your mask while in the Events Center or on campus. Plan to meet your graduate off campus after the Grad Walk; there is no gathering permitted in or around the Events Center as we must prepare for the next group of graduates.

CONCESSIONS
Food and drink are not permitted in the Events Center.

EMERGENCIES
Police and emergency medical staff are on site. An EMS station is located on the concourse level of the Events Center. If you need assistance, contact the closest usher. (Ushers can be identified by their volunteer name badges.) In the event of a fire alarm, the building’s emergency horns and strobes will be activated. Guests should carefully exit the building through the nearest exit. Be aware that the closest exit may not be through the same doors through which you entered the building. Ushers will assist in the orderly evacuation of the building.

LISTING OF GRADUATES
Inclusion in the program does not constitute evidence of completion of degree or honors requirements. Students who filed a Spring 2021 Application for Degree or Graduate Application for Degree with the University’s Student Records Office by March 25 are guaranteed to be in the program. Those filed after the deadline may or may not appear, depending on the date of submission. Recognition of Latin honors is based on the grade-point average at the end of the previous semester. In-progress courses are not included.

LOST CHILD
In the event any children have been separated from their family, immediately notify the nearest Events Center staff member or police officer who will attend to the lost child. Event staff members will be wearing a black polo and a name tag.

PHONES
Guests are asked to silence cell phones for the duration of the ceremony. Your cooperation is greatly appreciated.

PHOTOGRAPHY
So that all may enjoy the majesty and joy of the occasion, we ask guests to refrain from approaching the stage to take pictures during the ceremony. Photographers from GradImages will be photographing our graduates as they cross the stage. For information on how to order prints, visit www.gradimages.com.

RESTROOMS
Restrooms are located on the east and west sides of the Events Center concourse.

SOCIAL MEDIA
For pictures and ceremony information, follow Binghamton University on Facebook, Instagram, Twitter and Snapchat.
## REGALIA HOOD COLORS

### GRADUATE CEREMONY

**Doctoral Degrees**

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**Master’s Degrees**

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### CCPA CEREMONY

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### DECKER COLLEGE CEREMONY

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<td>APRICOT</td>
<td>(NURSING)</td>
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ALMA MATER

IN THE ROLLING HILLS OF BINGHAMTON

Words by Xin Engel, music by David Engel ’86, arrangement by Daniel Fabricius

In the rolling hills of Binghamton
’Neath everchanging skies
Where two gently flowing rivers meet,
We form our cherished ties.

Together we spend these years,
United in our aim.
Through our bold pursuit of excellence,
We proudly bear your name.

Chorus:
O Binghamton, we carry thee
With us for all our time
And through us individually
Forever may you shine.