ASPRS 2022 YEARBOOK

asprs

THE IMAGING
& GEOSPATIAL
INFORMATION
SOCIETY

ASPRS: The Imaging and Geospatial Information Society

The mission of ASPRS: *The Imaging and Geospatial Information Society* is to advance knowledge and improve understanding of the mapping sciences and to promote the responsible application of photogrammetry, remote sensing, geographic information systems (GIS), lidar, Unmanned Autonomous Systems (UAS) and supporting technologies.

Geospatial information answers the questions who, what, when, and primarily where. ASPRS is committed to providing the highest quality spatial information to all people for effective decision making and better understanding to improve their quality of life.

The ASPRS Strategic Plan sets forth the goals which represent the focus of the organization that are to be adopted on the national, regional, and local levels.

Founded in 1934, ASPRS has given increasing service to the scientific, user communities, and the nation through development of the art and science of photogrammetry, remote sensing, geographic information systems, lidar and UAS.

Scope of Society Interest

Initially, the core technologies represented by ASPRS are photogrammetry, remote sensing, GIS, lidar and UAS. Supporting technologies include, but are not limited to, cartography, spatial positioning, image processing, and photo interpretation.

The Society's integration of core and supporting technologies to real-world applications are currently concentrated in the areas of mapping, environmental and natural resources monitoring, modeling, simulation, visualization, close range measurement, and sociocultural documentation. The Society advances responsible practice through its professional certification program, continuing education and workshops, publications, standards, and venues for social and career networking.

Dissemination of Scientific Information

The Society disseminates scientific information through meetings and publications. Publications of the Society include our journal, *Photogrammetric Engineering and Remote Sensing* (*PE&RS*), published monthly, and the basic manuals of the science — the *DEM Users Manual,* the *Manual of Photogrammetry*, the *Manual of Remote Sensing,* the *Airborne Topographic Lidar Manual*; the *Manual of Geographic Information Systems*, and proceedings from technical meetings and symposia.

In addition to its publications, the Society thrives through local and national meetings, and specialty conferences to disseminate knowledge of the science as rapidly and effectively as possible. The national Society is responsible for the development and presentation of the Annual Conference and specialty meetings to help keep professionals up-to-date on new developments and technology in the field. The Society is the U.S. Member of the International Society for Photogrammetry and Remote Sensing.

Society Membership

Five classes of members constitute our Society: Fellow members who have been active for at least ten years and who have performed exceptional service in advancing the science and use of the technologies; Active Members — those from whom the Society draws its officers, directors, and committees; Student Members — a special class of members established to assure a continuing flow of scientific capability in the geospatial sciences, Sustaining Members — those individuals and commercial organizations who desire to render monetary support to the Society; and Emeritus (life) Members who have maintained continuous membership for 25 years and have reached the age of 65, or for 35 consecutive years and have reached the age of 60.

Scholarships and Awards

ASPRS annually offers nine student scholarships ranging in value from $2,000 to $7,000. Recipients are chosen through a competitive application process with all scholarships endowed by the ASPRS Foundation. Additional awards for outstanding papers published in *PE&RS*, professional achievement and service activities are determined by committee selection.

Governance of the Society

The governance of the national Society is vested in its Board of Directors and its Officers. Responsibility for the day-to-day management of Society affairs rests with the Executive Director. The Society has established and supports a series of committees, which are responsible to the President. Their function is advisory. However, committee chairpersons may act for the President when directed to do so. The Society is subdivided geographically into 14 Regions, some of which have organized additional Chapters. Each of these regions selects its own officers and directors, and collectively, the Regions elects the chair of the Region Officers Council who is a member of the Board of Directors of the national Society. The Society organization includes seven Technical Divisions: Remote Sensing Applications, Primary Data Acquisition, Professional Practice, Photogrammetric Applications, Geographic Information Systems, Lidar and UAS. The purpose of these Divisions is to bring the Society closer to its members who are ordinarily specialists in a limited phase of the discipline. The Division Directors elect their representative to the Technical Division Directors Council who is a member of the Board of Directors. In addition, the Chair of the Sustaining Members Council represents that segment of the membership on the Board of Directors; student members elect the chair of the Student Advisory Council and Early Career Professionals select their representatives, respectively, both of whom are Board members.

ASPRS Presidential Address

Chris Parrish

Based on remarks made at Geo Week 2022, Denver, Colorado

"Yet, as far as we've come, I am convinced that we are only just reaching the inflection point on the geospatial technology growth curve. Put differently, we're in for an exciting next couple decades!"

My name is Chris Parrish, and I am honored to serve as this year's ASPRS President. When I first joined ASPRS at the end of the last millennium, the geospatial landscape looked quite different. Airborne lidar was still in its relative infancy, as were direct georeferencing, softcopy photogrammetry, and digital aerial cameras. Tools and technologies that did not yet exist include structure from motion photogrammetry; commercially-available drones; cloud computing; the whole concept of geospatial operations in "the cloud" (yes, we had clouds—the type in the sky that posed problems in satellite imagery, and still do); Google Earth Engine (or Google Earth, for that matter); GNSS and lidar on our smartphones (because our phones were not yet smart); and a vast range of technologies we now take for granted in our everyday lives and work. Yet, as far as we've come, I am convinced that we are only just reaching the inflection point on the geospatial technology growth curve. Put differently, we're in for an exciting next couple decades!

What can we do now to help spearhead the future success of our field and of ASPRS? One key is investing in the next generation of geospatial professionals, including students and early-career professionals. In the classes I teach and in mentoring graduate students, I am constantly impressed by my students' altruism and desire to contribute to solving society's greatest challenges, from climate, to equity, inclusiveness, justice, and belonging. One of my primary goals, in collaboration with the Student Advisory Council (SAC) and Early Career Professionals Council (ECPC), is to help ASPRS grow and transform in ways that will inspire these future leaders of our profession to actively engage in ASPRS. Specific goals include streamlining the process to create new student chapters and providing resources to both students and educators. Equally important are new activities aimed at helping students make the transition to early career professionals by providing resources focused on job search, interviewing, networking, and early-career professional development.

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Over the past eight months, I have been facilitating monthly ASPRS Brainstorming-to-Action (BAM) meetings, and these have resulted in a number of ideas for new ASPRS initiatives. Borrowing from Mid-South Region, one such initiative is to develop "microlearning" modules, including short how-to videos focused on specific tasks and topics in photogrammetry, remote sensing, and geospatial science. Other planed initiatives include new standards and specifications efforts and leading the geospatial professions in adopting and supporting the new National Geodetic Survey (NGS) datums, including the North American Terrestrial Reference Frame of 2022 (NATRF2022) and North American-Pacific Geopotential Datum of 2022 (NAPGD2022). Planned new publications will focus on UAS, Geiger-mode and single-photon lidar, and topobathymetric lidar. Another goal is to expand ASPRS's purview in domains experiencing rapid growth in use of geospatial technologies, such as autonomous vehicles and the maritime sector.

Another priority is enhancing our professional journal, Photogrammetric Engineering and Remote Sensing (*PE&RS*), which can and should serve as the top peer-reviewed journal in our field. Publication models are evolving rapidly, with greater emphasis being placed on open-access, quick review times, and, of course, high-quality, relevant and timely papers. Many top journals are moving toward providing open access to not only papers, but also data, as well as providing options for publishing videos and a range of other supplemental materials. By keeping up-to-date with these rapid changes, we can ensure that *PE&RS* remains the premier journal of imaging and geospatial information science and technology.

Our monthly Brainstorming-to-Action meetings are open to all members, so please consider attending and sharing your ideas. I encourage you to become actively engaged in ASPRS, if you aren't already. There are many ways to make important contributions, and they do not all require running for a National office. You can contribute by serving on committees, councils, volunteering at conferences, participating in Division meetings, or leading events within your local ASPRS Region. I can say from personal experience that active engagement in ASPRS can be incredibly rewarding and a great opportunity to help chart the course of our profession.

I would like to express my gratitude to a number of people. I thank Dr. Jason Stoker of USGS, a longtime colleague and immediate Past President of ASPRS, for his leadership over the past year. To my colleagues on the Board of Directors, Committee and Council Chairs, Division Directors and Region leaders, ASPRS Executive Director, Karen Schuckman, Assistant Director of Publications, Rae Kelley, and Digital Publications Manager, Matt Austin, my sincere thanks for everything you do for ASPRS. And, last but certainly not least, I would like to thank all members of ASPRS for your participation in a truly outstanding organization. I am grateful for the opportunity to represent you as the 2022 ASPRS President!

Annual Business Meeting and Installation of Officers

ASPRS Presidential Citations

Bobbi Lenczowski — For her tireless devotion to the Society and providing authoritative guidance on all ASPRS bylaws and procedures, even after retiring from positions of record.

Qassim Abdullah — For his willingness and leadership to update the ASPRS Positional Accuracy Standards for Digital Geospatial Data.

Youssef Kaddoura — For his initiative and leadership in finding new and creative ways to increase and engage membership.

Stewart Walker — For providing constant and constructive guidance, knowledge and advice to a President trying to find his way.

Melissa Martin — For her leadership on the Early Career Professionals Council and willingness to step up and help whenever asked.

Demetrio Zourarakis — For his dedication to ASPRS and his superb handling of the Region Officers Council leadership transition.

Robert Ryerson — For his contributions to the Sector Insights Column and his selfless act of forgoing his honorarium and donating it to the Student Volunteer Travel Grant.

Lucia Lovison — For her contributions to the Sector Insights Column and support of the Student Volunteer Travel Grant.

(L-R) Chris Parrish and Youssef Kaddoura. Courtesy L. Quackenbush.

Purpose: First awarded in 1992, Presidential Citations are presented by the ASPRS President to members of ASPRS and other societies, family members, and friends in recognition of special, personal, and meritorious contributions to the operation or advancement of the Society and its interests during the presidential year.

Donor/Award: ASPRS. The Presidential Citation is a certificate.

ASPRS Outstanding Service Award

Mike Zoltek — For his leadership on completing the implementation of our online certification program.

Alper Yilmaz — For his efforts in improving the Impact Factor of *PE&RS*.

Chris Parrish and **Bandana Kar** — For their leadership in making the ASPRS Diversity, Equity and Inclusion Committee a reality.

Purpose: Established in 1991, The Outstanding Service Award is given in recognition of outstanding and unusual efforts in helping ASPRS develop and carry out its program over a sustained period. Recipients have performed outstanding service at the chapter, regional, or national level. Awardees' service includes any activities, including professional, that have helped the Society achieve its goals and objectives.

Donor/Award: ASPRS. The Outstanding Service Award consists of a bronze plaque.

Retiring Council Chairs
Bandana Kar — Technical Division Directors Council
Melissa Martin — Early Career Professionals Council
Mike Zoltek — Committee Chairs Council

New Council Chairs
Bill Swope — Technical Division Directors Council
Madeline Stewart — Early Career Professionals Council
David Stolarz — Committee Chairs Council

Retiring Division Directors
Josh Nimetz — Lidar Division
Kurt Rogers — Photogrammetric Applications Division

New Division Directors
Ajit Sampath — Lidar Division
Ben Wilkinson — Photogrammetric Applications Division

New Division Assistant Directors
Jin Lee — Geographic Information Systems Division
Matt Bethel — Lidar Division
Henry "Hank" Theiss — Photogrammetric Applications Div.
Bahram Salehi — Unmanned Autonomous Systems Division


(L-R) Chris Parrish and Matt Bethel. Courtesy L. Quackenbush.

Retiring President
Jeff Lovin — Immediate Past President

New Board Officers
Bandana Kar — Vice-President
Lorraine Amenda — President-Elect
Christopher Parrish — President

Birdseye Citation and President's Key to Retiring President

Jason Stoker — Immediate Past-President

Purpose: The Col. Claude H. Birdseye President's Citation was established in 1965 as a tribute to one of the founders and the first president of the Society. Each year at the Annual Convention it is conferred on the outgoing president in recognition of her/his contributions to the Society.

Donor/Award: ASPRS. The Birdseye Citation carries with it a gold Past President's Key, and a hand-engrossed certificate. The retiring President will also receive the Presidential Gavel mounted on a walnut plaque.

Awards and Scholarships

Awards for Outstanding Papers, Professional Achievement, and Service activities are determined by committee selection; scholarships and academic awards are also determined by committee selection but are chosen from among current applications. For details on the application process, see https://www.asprs.org/education/asprs-awards-and-scholarships.

Region Awards

Region of the Year

Florida Region

Region Web Site and Newsletter of the Year

Eastern Great Lakes Region
The Potomac Region

Roger Hoffer Membership Award

Honorable Mention
Dewberry
Karen Schuckman

Purpose: First awarded in 1968 as the ASPRS Ford Bartlett Membership Award (which was originally sponsored by the firm of Lockwood, Kessler, and Bartlett, Inc.) to honor members for actively promoting membership in ASPRS. This award now marks the exceptional efforts of ASPRS Past President Roger Hoffer in managing the Membership Committee and recruiting hundreds of student members.

(L-R) Karen Schuckman, Roger Hoffer, Dave Maune (from Dewberry), and Chris Parrish. Karen and Dewberry received Honorable Mentions for the Roger Hoffer Membership Award. Courtesy L. Quackenbush.

Donor/Award: ASPRS. A member is eligible to receive the Award after sponsoring ten or more members in one year. Each recipient receives a hand-engrossed certificate and a one-year membership in the Society. An Honorable Mention is awarded to those who sponsor at least five new members.

Outstanding Paper Awards

The Esri Award for Best Scientific Paper in GIS

1st Place
Ningning Zhu, Bisheng Yang, Zhen Dong, Chi Chen, Xia Huang, and Wen Xiao for "Automatic Registration of MMS LiDAR Points and Panoramic Image Sequence by Relative Orientation Model." *PE&RS*, 87 (12): 913-922.

2nd Place
Yanyi Zhang, Yugang Tian, Lihao Zhang for "A Soil and Impervious Surface Adjusted Index for Urban Impervious Surface Area Mapping." *PE&RS*, 87 (2): 91-104.

3rd Place
Qiutong Yu, We Liu, Wesley Nunes Gonçalves, José Marcato Junior, Jonathan Li for "Spatial Resolution Enhancement for Large-scale Land Cover Mapping via Weakly Supervised Deep Learning." *PE&RS*, 87 (6): 405-412.

Purpose: Established in 1991, the fully endowed Esri Award honors individuals who publish papers of scientific merit that advance our knowledge about GIS technology.

Donor/Award: Esri, Inc. through the ASPRS Foundation. The First-Place award includes a cash award of $1,000 and a certificate; Second Place is a cash award of $600 and a certificate; Third Place is a cash award of $400 and a certificate.

John I. Davidson President's Award for Practical Papers

1st Place
Bo Yu, Fang Chen, Ying Dong, Lei Wang, Ning Wang, and Aqiang Yang for "MSegnet, a Practical Network for Building Detection from High Spatial Resolution Images." *PE&RS* 87(12): 901-906.

2nd Place
Jiali Wang and Yannan Chen for "Digital Surface Model Refinement Based on Projected Images." *PE&RS*, 87(3): 181-187.

3rd Place
Joseph McGlinchy, Brian Muller, Brian Johnson, Maxwell Joseph, and Jeremy Diaz for "Fully Convolutional Neural Network for Impervious Surface Segmentation in Mixed Urban Environment." *PE&RS* 87(2): 117-123.

Purpose: The John I. Davidson President's Award for Practical Papers was established in 1979 to encourage and commend individuals who publish papers of practical or applied value in PE&RS.

Donor/Award: The ASPRS Foundation in memory of ASPRS Past President John I. Davidson. The First-Place award includes a cash award of $1,000 and a certificate; Second Place is a cash award of $600 and a certificate; Third Place is a cash award of $400 and a certificate.

Talbert Abrams Award

Grand Award
Rongjun Qin, Xiao Ling, Xu Huang for "A Unified Framework of Bundle Adjustment and Feature Matching for High-resolution Satellite Images." *PE&RS*, 87(7): 485-490.

First Honorable Mention
Tian Zhou, Lisa M. LaForest, Seyyed Meghdad Hasheminasab, Ayman Habib for "System Calibration Including Time Delay Estimation for GNSS/INS-Assisted Pushbroom Scanners Onboard UAV Platforms." *PE&RS*, 87(10): 705-716.

Second Honorable Mention
Joseph McGlinchy, Brian Muller, Brian Johnson, Maxwell Joseph, and Jeremy Diaz for "Fully Convolutional Neural Network for Impervious Surface Segmentation in Mixed Urban Environment." *PE&RS*, 87(2): 117-123.

Purpose: The Talbert Abrams Award was established in 1945 to encourage the authorship and recording of current, historical, engineering, and scientific developments in photogrammetry. The Award is determined from papers published in *PE&RS*.

Donor/Award: The ASPRS Foundation. The award consists of a check for $3,000 and an engraved plaque for the Grand Award, and an award certificate for the First and Second Honorable Mentions.

Scholarships

Robert E. Altenhofen Memorial Scholarship

2022 Recipient—Pouyan Boreshnavard

Pouyan Boreshnavard is a second year PhD student in the Department of Civil, Environmental, and Geodetic Engineering at The Ohio State University. Boreshnavard demonstrated a strong alignment with the criteria of Robert E. Altenhofen Memorial Scholarship with his strong background in rigorous photogrammetric concepts. During his undergraduate degree, Boreshnavard served as a teaching assistant for courses in photogrammetric computer vision and is currently serving as a graduate research assistant focused on researching artificial intelligence, autonomous navigation, and photogrammetry. Boreshnavard aims to integrate deep learning with his photogrammetric and remote sensing knowledge to solve problems geometrically by using these ideas within the neural network cost/energy function.

Purpose: First given in 1986, the Robert E. Altenhofen Memorial Scholarship is intended to encourage and commend college students who display exceptional interest and ability in the theoretical aspects of photogrammetry.

Donor/Award: The ASPRS Foundation. This award was originally established by Mrs. Helen Altenhofen as a memorial to her husband, Robert E. Altenhofen, past president of ASPRS. He was an outstanding practitioner of photogrammetry and made notable contributions to 13 the mathematical aspects of the science. The Altenhofen Scholarship consists of a check for $2,000 and a certificate.

Abraham Anson Memorial Scholarship

2022 Recipient—James Jones

James Jones is an undergraduate student in geomatics at Nicholls State University (NSU). Jones has worked as an undergraduate research assistant on multiple projects that involve the use of hyperspectral and lidar sensors mounted on an unmanned aerial system (UAS). The first project examined land loss and gain in the Mississippi delta and the second involved data fusion and data analytics for sugarcane crop yield monitoring. Jones will be presenting his findings during the school's spring research week to be held in March 2022 and has previously presented his research at the University of Louisiana at Lafayette Fall Undergraduate Research Conference. Jones is currently Treasurer of NSU's Geomatics Student Association (GSA) and promotes the Geomatics program at Nicholls and Professional Societies. He is the recipient of Nicholls Scholars Academic Honors and 2020 Morris P. Hebert Scholarship for academic excellence in Geomatics. He is very active in local church group in serving the community and has been recognized for his service with the Knights of Columbus award, Louisiana Boys State, Rotary Club Service Above Self Award and Diocesan Youth Leadership Award. He is also an active member of NSPS, LSPS and ASPRS.

Purpose: To encourage students who have an exceptional interest in pursuing scientific research or education in geospatial science or technology related to photogrammetry, remote sensing, surveying, and mapping to enter a professional field where they can use the knowledge of their discipline to excel in their profession.

Donor/Award: This award is presented by the ASPRS Foundation from funds donated by the Anson bequest and contributions from the Society and the Potomac Region as a tribute to Abe Anson's many contributions to the field of photogrammetry, remote sensing, and long, dedicated service to the Society. The award consists of a certificate, a check for $2,000, and a one-year membership renewal in the Society.

John O. Behrens Institute for Land Information (ILI) Memorial Scholarship

2022 Recipient—Ashish Pandey

Ashish Pandey is pursuing a Bachelor of Science degree in Geomatics from Nicholls State University and plans to graduate in May of 2022. Pandey has provided geospatial technical support to the Sawtooth National Forest as an intern for the Student Conservation Association and served as an undergraduate research assistant gaining experience with field data collection and data visualization tools. He also explored the use of sUAS to monitor sugarcane growth and status with hyperspectral sensors. Pandey has applied his knowledge of geospatial technology in volunteer service to improve sustainable livelihoods of rural Nepalese families. Following his BS, Pandey plans to seek work experience in pursuit of his professional land surveyor license, and to continue his education with an aim to earn a PhD in Geospatial Science and Engineering and shows strong potential to contributing to the Land Information profession. Pandey supports the Nicholls State University campus community by devoting time to helping others in the University's Tutorial and Academic Enhancement Center. He has also served in leadership positions in student organizations such as the Geomatics Student Association, the Student Programming Association, the Student Multicultural Association, and as president of the Student International Community.

The John O. Behrens ILI Memorial Scholarship was established by the Institute for Land Information (since officially dissolved) as a tribute to the many contributions of Mr. Behrens to the field of geographic and land related information and technology. John O. Behrens was a founder of the ILI and the author of many articles about the value of spatial information, land assessment and taxation, and land information policy. In recognition of Mr. Behrens outstanding contributions over his distinguished career, funds from the ILI have been donated to the ASPRS Foundation to be administered for the John O. Behrens ILI Memorial Scholarship.

Purpose: To encourage students/persons who have an exceptional interest in pursuing scientific research or education in geospatial science or technology or land information systems/records to enter a professional field where they can use the knowledge of this discipline to excel in their profession.

Donor/Award: The ASPRS Foundation from funds donated by the ILI. The Award consists of a certificate, a check for $2,000, and a one-year membership renewal in the Society.

Robert N. Colwell Memorial Fellowship

2022 Recipient—Anais Zimmer

Anais Zimmer is a doctoral candidate and Graduate Research Assistant in the Department of Geography and the Environment at the University of Texas at Austin. She plans to complete her degree requirements in May 2023. The focus of her graduate studies has been on ecosystem development after glacier retreat. She has developed a method that combines in-situ RGN (Red-Green-Near-Infrared) near-ground remote sensing, multispectral UAV photogrammetry, and satellite imagery with data from in-situ floristic and geomorphic plot surveys, soil laboratory analysis, and soil temperature monitoring.

Zimmer's long-term objective is to provide a practical method for researchers, land managers, local communities, and policymakers to map, monitor, and sustainably manage emerging post-glacial landscapes and their resources. Her methodology can be used to quantify the potential of post-glacial ecosystems to provide services such as water purification, aquifer recharge, carbon sequestration, slope stabilization, and to support the livelihoods of local and downstream populations in future glacier-free valleys.

To demonstrate the application of this geospatial methodology to any glacier environment, Zimmer has worked in nine sites distributed between the French and Swiss Alps and the Peruvian Andes. Her research contributions for assessing climate change-induced glacial melting is critical to her home country of France, her adopted home country of Peru, and to other Alpine environments around the world. She has extraordinary support from research directors in the Alps and Andes, local communities, and resourceful faculty who are committed to the success of her dissertation.

Over the course of more than a half century, Dr. Robert N. Colwell developed a reputation as one of the world's most respected leaders in remote sensing, a field that he stewarded from the interpretation of aerial photographs during World War II, to the advanced acquisition and analysis of many types of geospatial data from military and civilian satellite platforms. His career included nearly 40 years of teaching and research at the University of California, Berkeley, a distinguished record of military service reaching the rank of Rear Admiral, and prominent roles in private industry and as a consultant for many U.S. and international agencies. Among the many awards bestowed upon him, Dr. Colwell had the distinction of being one of the 25 Honorary Members of ASPRS.

Purpose: Established in 2006 to encourage and commend college/university graduate students or post-doctoral researchers who display exceptional interest, desire, ability, and aptitude in the field of remote sensing or other related geospatial information technologies, and who have a special interest in developing practical uses of these technologies.

Donor/Award: The ASPRS Foundation, from funds donated by students, associates, colleagues, and friends of Robert N. Colwell. The Award consists of a grant of $8,000 and a one-year membership renewal in the Society.

William A. Fischer Memorial Scholarship

2022 Recipient—Abishek Poudel

Abishek Poudel is a doctoral candidate at the State University of New York, College of Environmental Science and Forestry. His field of specialty is ecological modeling and geospatial applications for forest and natural resources management. Poudel has taken a demanding suite of quantitative courses from a variety of departments, which include field measurements, applied statistics, geographic information systems (GIS) and numerical and computing methods. In addition to his studies, he has served as a research aid and teaching assistant in his department.

Poudel's research interests lie in the integration of geospatial technologies with field studies in the conservation and management of forested environments. His research explores how supplementing field observations with imagery from small Unmanned Aerial Systems (sUAS) can be used to produce accurate and precise wall-to-wall coverage of forest succession across a variety of natural environments. Results will provide significant benefits to the broader forest ecology community, as well as the geospatial technology community.

Purpose: The William A. Fischer Scholarship facilitates graduate studies and career goals of a worthy student adjudged to address new and innovative uses of remote sensing data and techniques that relate to the natural, cultural, or agricultural resources of the Earth. It was established in 1984.

Donor/Award: The ASPRS Foundation through individual and corporate contributions in memory of William A. Fischer. The William A. Fischer Memorial Scholarship consists of a $2,000 check and a certificate.

Government Services Scholarship

2022 Recipient—Farid Qamar

Farid Qamar is a PhD student and graduate research assistant in Engineering and Public Policy at the University of Delaware. Prior to enrolling in a master's degree program in Data Science at the University of Delaware, Qamar worked as a project manager in the GIS branch for the Ontario Ministry of Natural Resources. Qamar's current research is using ground-based high-resolution hyperspectral imagery as a rapid, non-destructive, fiscally feasible, and accurate method to automate the continuous monitoring of plant health in cities. He has already published a paper using hyperspectral images to identify urban vegetation, and subsequently vegetation health, and has another manuscript in review focused on the correlation between air quality parameters and the quantified health of vegetation obtained from remote hyperspectral images. Qamar aims to use remote sensing of vegetation to measure the ground-level air quality in urban areas and evaluate the efficacy of local policies that are based on the sparse federally implemented air quality monitoring networks. Such evaluation can shed light on the disparity of air quality outcomes between various social divides to shed more light on the need for further environmental justice.

Purpose: The newly established Government Services Scholarship, awarded for the first time this year, encourages upper-division, undergraduate- and graduate-level college students to pursue a course of study in photogrammetry and related topics leading to a career in the geospatial mapping profession in the government sector (federal, state, or local) within the United States. The Award also encourages geospatial professionals already in government service to pursue advanced degrees and provides a preference to U.S. veterans.

Donor/Award: The ASPRS Foundation through the support of an anonymous donor who is a past member of ASPRS and has been a long-time supporter of ASPRS and the ASPRS Foundation. The Government Services Scholarship consists of a certificate and a check for $5000.

Francis H. Moffitt Memorial Scholarship

2022 Recipient—Oscar Duran

(L-R) Chris Parrish and Oscar Duran accepting the Francis H. Moffitt Memorial Scholarship. Courtesy L. Quackenbush.

Oscar Duran is pursuing a master's degree at the California State University, Fresno, in photogrammetry after receiving his BS at the University of Calgary. His research makes a comparative accuracy assessment of 3D Model Programs, using SfM methods, and photogrammetry-based programs. The research aims to assess the accuracy of photogrammetric software used in Precision Agriculture. Duran has extensive practical experience through his past employment as a surveyor, as a Geomatics Field Technician and finally as the Team Lead for Western Canada projects in AB, Canada. He currently works at Towill, Inc., where his responsibilities include the application of Aerial Photogrammetry, Airborne/Terrestrial LiDAR, and Conventional Surveying. He already holds professional licenses including Professional Engineer in Alberta, Canada, Project Management Professional in the USA, and Licensed Surveyor in Training in California. He hopes to become a Certified Photogrammetrist in 2022. Beyond his academic and professional work, Duran's extracurricular activities includes numerous ASPRS activities at the University and performing extensive community service. He currently serves as Deputy Chair on the ASPRS Student Advisory Council.

Purpose: The award was first presented in 2008 with the purpose of encouraging upper-division, undergraduate-level, and graduate-level college students to pursue a course of study in surveying and photogrammetry leading to a career in the geospatial mapping profession.

Donor/Award: The ASPRS Foundation from funds donated to the Foundation from former students, associates, colleagues, and friends of Francis Moffitt. The award consists of a certificate, a check in the amount of $8,000, and a renewal membership in the Society.

The Kenneth J. Osborn Memorial Scholarship

2022 Recipient—Ashish Pandey

Ashish Pandey is pursuing a Bachelor of Science degree in Geomatics from Nicholls State University and plans to graduate in May of 2022. Following his BS, he plans to seek work experience in pursuit of his professional land surveyor license, and to continue his education with an aim to earn a PhD in Geospatial Science and Engineering. Pandey exemplified the Osborn qualities of communication and collaboration through participation in activities within the Nicholls State University campus community by devoting time to helping others in the University's Tutorial and Academic Enhancement Center. He has also served in leadership positions in student organizations such as the Geomatics Student Association, the Student Programming Association, the Student Multicultural Association, and as president of the Student International Community. Pandey's faculty advisor is Dr. Esra Tekdal Yilmaz.

Purpose: to encourage and commend college students who display exceptional interest, desire, ability, and aptitude to enter the profession of surveying, mapping, photogrammetry, or geospatial information and technology. In addition, the Award recognizes students who excel at an aspect of the profession that Ken demonstrated so very well, that of communications and collaboration.

Donor/Award: The ASPRS Foundation from funds donated by the friends and colleagues of Kenneth J. Osborn. Recognized nationally and internationally, Ken was an outstanding practitioner of surveying, mapping, photogrammetry, and geospatial information and technology, and a great friend of the Society. As a professional cartographer with the U.S. Geological Survey, Ken made significant contributions to these fields. The award was first offered in 2005. The Award consists of a check in the amount of $2,000, an engrossed certificate and a membership renewal in the Society.

Ta Liang Memorial Award

2022 Recipient—Bryce Berrett

Bryce Berrett is a doctoral student at Oregon State University under the leadership of Dr. Michael J. Olsen and Ben Leshchinsky. Bryce's focus is the application of remote sensing, photogrammetry, and geomatics to landslide and hazard mitigation and civil engineering. Berrett's doctoral research plans to use remote sensing and photogrammetry to analyze the cause and mechanisms behind increased landslide observance after earthquake events. With a Bachelor of Science and Master of Science in Civil Engineering from Brigham Young University and an FAA Drone Pilot certification Berrett is well positioned to accomplish these goals. Berrett has been actively involved in contributing to research and practical applications in his focus areas and has received various scholarships and awards. Beyond his academic goals and prowess, Berrett speaks Spanish, Portuguese and is an Eagle Scout. Berrett's intent for the Ta Liang scholarship is to travel to New Zealand to perform a critical part of his research. New Zealand provides a unique location of study that is seismically active with various large events in the past. This research and travel to New Zealand will greatly contribute to Berrett's career by lending practical, real-world experience and helping further his research in hazard mitigation.

Purpose: To facilitate research-related travel by outstanding graduate students in remote sensing, including field investigations, agency visits, participation in conferences, or other travel that enhances or facilitates graduate research.

Donor/Award: Individual and corporate contributions to the ASPRS Foundation in memory of Ta Liang, a skilled civil engineer, an excellent teacher, and one of the world's foremost air photo interpreters, the award consists of a $2,000 grant and a certificate.

(L-R) Dave Maune (Dewberry), Lorraine B. Amenda (ASPRS President Elect), Rebecca Morton (ASPRS President-2017), and Alan M. Mikuni (ASPRS President-2000). Courtesy Rae Kelley.

Paul R. Wolf Memorial Scholarship

2022 Recipient—Ali Gonzalez Perez

Ali Gonzalez Perez is presented the Paul R. Wolf Memorial scholarship in recognition of his outstanding academic credentials and his plans and enthusiasm to become an education professional in Surveying, Mapping, Photogrammetry, and related fields. Perez is currently a Doctoral candidate in Forest Resources and Conservation (Geomatics major) at the University of Florida with a projected graduation date of December 2023. Perez has demonstrated a continued interest, dedication, enthusiasm, passion, and aptitude to become an education professional and has been recognized at all levels. Perez's career goal is to become a tenured teaching/research faculty member at a university, wishing to grow his skill set and continually learn with special interest in the expanding the tools used in geomatics data extraction and analysis.

Purpose: To encourage and commend college students who display exceptional interest, desire, ability, and aptitude to enter the profession of teaching surveying, mapping, or photogrammetry.

Donor: the ASPRS Foundation from funds donated by the friends and colleagues of Paul R. Wolf. Recognized nationally and internationally, Paul was an outstanding educator and practitioner of surveying, mapping, and photogrammetry and a great friend of the Society. As author, teacher, and mentor, Paul made significant educational and academic contributions to these fields. The award was inaugurated in 2003 and includes a grant of $5,000, a hand-engrossed certificate and a one-year membership renewal in the Society.

Geo Week Joint Awards

ASPRS Fellow Award

2022 Recipients—Bruce K. Quirk, Haluk Cetin and Henry "Hank" Theiss

Bruce K. Quirk

Bruce Quirk is a semi-retired scientist working for the U.S. Geological Survey (USGS). He received his undergraduate and graduate degrees from the University of Wisconsin-Madison. Quirk was one of the first graduate students in the Environmental Monitoring Program and worked as a research and teaching assistant for remote sensing classes. His mentors were Drs. Ralph Kiefer, Paul Wolf and Frank Scarpace. After receiving his Ph.D. in remote sensing in 1981, he was hired at the EROS Data Center, in Sioux Falls, SD. Quirk held many positions during his 25 years at EROS from scientist to project leader to branch chief. When the USGS determined a need for on-site representation with NASA, Quirk relocated to Goddard Space Flight Center as the USGS technical liaison where he was recognized for his outstanding commitment, dedication, and contribution to the successful establishment of one of NASA's largest and most complex contracts for a data and information system for the Earth Observing System (EOS). Quirk was also involved in the initial design and development of Landsat 7.

Upon completion of his liaison responsibilities at NASA, Quirk returned to EROS to assume the position of Deputy Chief of the Science and Applications Branch where his efforts to document the value of EROS's archive of Landsat data resulted in the development of a highly valuable change-pair booklet and corresponding website that have proven to be an invaluable source of historical information of the Earth's surface. He also served as the leader of the OhioView Project, a cooperative activity working with the OhioView Consortium, a group of universities in the State of Ohio that pioneered the delivery of Landsat data over the Internet. These activities also resulted in the design, development, and release of Earth Explorer, which is still the primary interface for Internet users to USGS data sets at the EROS Center. This relationship continues today between the USGS and now the AmericaView Consortium. As Chief of the Satellite Systems Branch, he was responsible for all Landsat activities at the EROS Center and overseeing the operation and management of the Land Processing Distributed Active Archive Center (LP DAAC). The LP DAAC archives and distributes satellite data from NASA EOS missions, such as Terra and Aqua. He also designed and implemented a system to convert analog aerial photographs to digital products. In 2007, Quirk relocated to USGS Headquarters in Reston, VA to become the Land Remote Sensing (LRS) Program Coordinator. In this role, he oversaw securing support and providing technical leadership for the development and launch of Landsat 8, thereby ensuring the continuation of the longest and most comprehensive record of the Earth's surface in existence. Quirk was instrumental in implementing the free and open Landsat data policy, which exponentially increased the distribution of the satellite archive, fostering an unprecedented increase in land change science and applications, as well as tremendous economic benefit to the United States. He also designed and implemented a series of

commercial satellite data contracts, working across agencies to acquire more than $100 million of data for less than $1 million, and distributing it to Federal, State, and local governments to further science applications and research. He reestablished the Department of the Interior Remote Sensing Working Group (DOIRSWG) with monthly calls and annual meetings, and established the Annual DOIRSWG report, which feeds the Annual Aeronautics and Space Report for the President. The working group's charter defines the DOIRSWG as the forum for remote sensing collaboration and guidance throughout the Department of the Interior.

Quirk is currently the Unmanned Aircraft Systems (UAS) Liaison for the USGS. In this role, Quirk has demonstrated proactive leadership in establishing and promoting UAS data collection. Quirk developed program and policy recommendations on all aspects of the application of UAS technology to science and land resource management. In addition, he has participated in the planning and execution of the four Federal UAS Users Workshops. Quirk is also involved in the Pecora conference series, chairing the Pecora 21/ISRSE 38 and Pecora 22 Conference Steering Committees with responsibility for all aspects of the planning and implementation of the conference.

Quirk has been an ASPRS member since the mid-1970s and has served in several capacities over the years. He was elected to be the Unmanned Autonomous Systems Division (UASD) Assistant Director and then the UASD Director from 2015–2018. He was also elected as the Technical Division Directors Council Chair from 2016-2018. In these positions he prepared and maintained operating procedures for inclusion in the Society Operating Procedures, and prepared reports to the Board of Directors which he served on from 2015-2018. Quirk was also involved in developing the Annual Conference Technical Program. He has been involved in *PE&RS* as a technical reviewer for papers and publishing research papers, including a special issue entitled *Advances in Unmanned Aircraft Systems Technology and Applications* in December 2014 for which he served as the special issue editor. Quirk has received numerous rewards over his four decades of involvement with the remote sensing community including the Department of the Interior's Distinguished Service and Meritorious Service Honor Award, the USGS's Shoemaker Communication Award for Earth From Space, the Shoemaker Award for Communication Product Excellence and in 2016 the Excellence in Leadership Award; several NASA Group Achievement Awards involving Landsat; and an ASPRS Presidential Citation and Outstanding Service Award. Quirk has made numerous presentations during his career covering his activities and published many papers including co-authoring *Federal Government Applications of UAS Technology in the recently published book*, *Applications of Small Unmanned Aircraft Systems Best Practices and Case Studies.*

Quirk has demonstrated exceptional technical and administrative leadership in developing and implementing land remote sensing programs of national and international significance throughout his career with the USGS and multiple contributions in his long association with ASPRS.

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Haluk Cetin

Haluk Cetin is a tenured Full Professor in the Department of Earth and Environmental Sciences, Murray State University (MSU). Since 2013, he has been the Director of KentuckyView, a consortium member of AmericaView, a nationwide consortium advancing Earth observation education through remote sensing science, applied research, workforce development, technology transfer, and community outreach. He received his B.S. and M.S degrees from Hacettepe University, Ankara, Turkey. Cetin received his Ph.D. in remote sensing, an interdisciplinary program, from Purdue University, West Lafayette, Indiana in 1993. As a graduate student at the Department of Earth and Atmospheric Sciences, he was awarded an Indiana Mining and Minerals Institute Research Assistantship. During his graduate years at Purdue, he taught Remote Sensing, as well as Petroleum Geology and Subsurface Techniques labs. Moreover, for two summers Cetin worked for Mobil Corporation as an exploration geologist and used his remote sensing mapping skills for oil exploration in Nevada. Cetin also participated in many activities of Laboratory for Applications of Remote Sensing (LARS) at Purdue University. For his first remote sensing publication, Cetin received the ASPRS Cambridge Instruments Photogrammetry and Remote Sensing Award in1990. He also received the ASPRS ERDAS Award for Best Scientific Paper in Remote Sensing in 1992, co-authored with the late Donald W. Levandowski, Cetin's Ph.D. advisor. Cetin also received Purdue University's A. H. Ismail Interdisciplinary Program Doctoral Research Award in 1992. He received three awards for his presentations (which were co-authored) at the Ninth Thematic Conference on Geologic Remote Sensing.

Cetin has been a member of ASPRS since 1990 and very proud to be a member without any interruptions. As a Ph.D. student he was involved with the ASPRS Student Affairs Committee (1990 and 1992). In 1993, Cetin accepted a Research Associate position with the Indiana Geological Survey/Indiana University (IU), Bloomington. He also had Assistant Professor (part-time) appointments with the Department of Geological Sciences and School of Public and Environmental Affairs at IU and taught remote sensing and Geographic Information Systems (GIS) classes. Cetin also gave a remote sensing workshop to Indonesian Scientists at IU.

In 1995, Cetin accepted an Assistant Professor position with

the Department of Geosciences at MSU. He was also named as a Research Associate at the Mid-America Remote Sensing Center (MARC), MSU. Cetin has been a thesis advisor of 19 M.S. students and two honors students. He has been advisor for Environmental Geology and Earth Science undergraduate programs. Cetin is the Graduate Coordinator and advisor for the Sustainability Science and the Environmental Sciences Master's programs of the Department. He served on more than 50 Master's thesis committees and advised three post-docs. Cetin holds one patent shared with Purdue University. He co-authored with students on 87 publications/presentations, some of which received awards. In 2015, he received the University Distinguished Mentor Award of MSU. Cetin currently uses Big Data analytics to tackle water quality issues globally using GIS, remotely sensed data, and cloud computing, particularly Google's Earth Engine.

Cetin has worked on several federally and state-funded projects as a principal investigator (PI) and provided leadership in interdisciplinary research projects. He has obtained a NASA grant to establish a Hyperspectral Laboratory at MSU and has been Director since 2006. He has also obtained educational grants from the National Science Foundation (NSF) and from private companies to set up a computer laboratory to enhance GIS capabilities of the Department at MSU. Cetin obtained funding with a commercial company for development of value-added commercial data products from high-resolution commercial satellite imagery. He has also been a Co-PI of an NSF funded project, Center for Watershed Environments. Cetin managed to secure a large grant from the Department of Homeland Security for a water simulation project involving a multi-university/multi-agency effort. He has also received grants from KY NASA EPSCoR to work on Precision Agriculture-related projects including multi-institution collaborations, which involved JPL, NASA's Stennis Space Center, ITD Spectral Visions, MSU Geosciences and Agriculture School, and the University of Kentucky. Cetin has published 56 papers and two book chapters, and has more than 100 presentations, some of which were invited and keynote presentations.

Cetin has reviewed books and many manuscripts submitted to several journals and served on editorial boards, such as The Open Remote Sensing Journal, Prompt International Research and Development (PIRAD) Journal, and the Journal of Yerbilimleri Earth Sciences. He has served on many committees and federal panels, such as NASA Postdoctoral Program (NPP), U.S. Environmental Protection Agency (EPA) Science To Achieve Results (STAR) Graduate Fellowships, NASA Future Investigators in NASA Earth and Space Science and Technology (FINESST), U.S. EPA National Priorities, NASA ACT Program, NSF Assessment of Student Achievement in Undergraduate Education (ASA), (NSF 01-82), Kentucky GIAC One Zone Committee, NASA Sustainable Land Imaging Technology panels.

Cetin has been an active ASPRS member. He was the Chair of the 2014 ASPRS Annual Conference held in Louisville, KY (received the Conference Management Award), the National Director of ASPRS Mid-South Region (2010-2016), the President of ASPRS Mid-South Region (2005-2010), ASPRS Mid-South Region Student Coordinator (1998-2004), Kentucky Councilperson, ASPRS Mid-South Region (1999-2001), and Vice President (2001-2004) of the Mid-South Region. He has been the faculty advisor of the MSU Student Chapter of ASPRS since 1999 and received the Ford Bartlett Award. He has been active with other professional organizations as well. Cetin was Continuing Education Committee Chair of Division of Environmental Geosciences of the American Association of Petroleum Geologists (1997-2002), Sigma Xi Science Education Committee Chair (2001-2002) and President of MSU Chapter of Sigma Xi (2004-2005). He was trained at the EROS Data Center in 2005 and became a Project Manager for the International Charter on Space and Major Disasters and received the 2017 USGS-NASA William T. Pecora Team Award as a team member.

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Henry "Hank" Theiss

Hank Theiss is a Research Associate Professor at the University of Arkansas, in the Center for Advanced Spatial Technologies (CAST). He has 25 years of experience supporting Geomatics research projects, primarily devising innovative photogrammetric solutions as a contractor to the Department of Defense (DoD) and Intelligence Community (IC), especially the National Geospatial-Intelligence Agency (NGA). Theiss graduated from Purdue University in 2000; his dissertation topic was "Photogrammetric Triangulation and Dynamic Modeling of Airborne Video Imagery." After graduation he spent a year as a Visiting Assistant Professor at Purdue, teaching graduate level courses and continuing his research. In 2001 he became Chief Scientist in Photogrammetry at Centauri, where he currently works part-time. During his time there he led a team of scientists to perform research and analyses in photogrammetry, error propagation, EO/IR/SAR/LIDAR sensor modeling from airborne and spaceborne platforms, image formation, close range applications, registration, and tool validation. His work significantly advanced the concept of generic sensor modeling of optical line scanners and frame sequences. Since its inception in 2005 he supported the Community Sensor Model Working Group (CSMWG) which fosters collaboration among government, industry, and academia to facilitate standardization, interoperability, and advancement of geopositioning capabilities associated with remote sensing systems. Since joining CAST in 2020, two examples of Theiss' research interests have involved: 1) photogrammetric sensor

modeling of historical satellite imagery such as KH-4 (Corona) and KH-9 (Hexagon); and 2) absolute accuracy assessment of 3D data such as "textured mesh" products generated from large numbers of overlapping EO satellite imagery.

Theiss has numerous publications to his credit, including a section in the *Manual of Photogrammetry, Sixth* Edition on the Community Sensor Model Concept, and many important papers in *Photogrammetric Engineering and Remote Sensing, IEEE Transactions on Geoscience and Remote Sensing, ISPRS International Archives* of the Photogrammetry, Remote Sensing, and Spatial Information Sciences, and SPIE conferences.

Purpose: Started in 1992, the designation of Fellow is conferred on Society members who have been active for a total of at least ten years and who have performed exceptional service in advancing the science and use of the mapping sciences and related disciplines. It is awarded for professional excellence and for service to the Society.

Donor/Award: ASPRS. The ASPRS Fellow Award includes a lapel pin and a certificate.

The Estes Memorial Teaching Award

2022 Recipient—Bon Dewitt

Dr. Bon Dewitt received his Ph.D. degree in Civil and Environmental Engineering from the University of Wisconsin-Madison in 1989. His specialties include photogrammetry, surveying, and digital mapping. At present, Dewitt is the Associate Director of the Geomatics Program at the University of Florida where he has been a faculty member since 1988. His primary research focuses on digital image sensor calibration and photogrammetric analysis of imagery from unmanned autonomous vehicles. He has taught many courses on various aspects of Geomatics, including Advanced Photogrammetry, Geodesy, Subdivision Design, Measurement Science, Route Geometrics, Hydrographic Surveying, and Digital Mapping.

Dewitt is a Fellow of the American Society for Photogrammetry and Remote Sensing, having joined as a student member in 1981. He served on the board for the Florida Region of ASPRS for 28 years, first as a director and then as secretary/treasurer. Dewitt is also licensed as a Professional Surveyor and Mapper in the State of Florida and is a member of the National Society of Professional Surveyors (NSPS) and a Life Member of the Florida Surveying and Mapping Society. He has received dozens of awards over his career, including the Earle J. Fennell award from NSPS for his contributions to education. He is also co-author with Paul Wolf and Ben Wilkinson of the widely used textbook, Elements of Photogrammetry with Applications in GIS.

The Estes Memorial Teaching Award is made in honor of Professor John E. ("Jack") Estes, teacher, mentor, scientist, and friend of ASPRS.

Purpose: To recognize individual achievement in the promotion of remote sensing and geographic information systems (GIS) technology and applications through educational efforts.

Donor/Award: ASPRS with funding provided by the ASPRS Foundation. Award consists of a presentation plaque and a cash award of $2,000.

The ASPRS Outstanding Technical Achievement Award

2022 Recipient: Dr. Bruno Scherzinger of Applanix in recognition of his leadership in commercialization and implementation of Global Navigation Satellite System (GNSS)-aided inertial navigation systems.

This technology has become ubiquitous in airborne remote sensing data collection and has led to more efficient and economical processing through capture of exterior orientation parameters at the time of data acquisition using an integrated GNSS-Inertial Measurement Unit (IMU) system. This type of system allows for direct georeferencing using a reduced amount of ground control to achieve accurate positioning of acquired data in real- or near real- time. Scherzinger's innovation and vision led to the private sector's initial adoption and implementation of the technology and continues to spark innovation in this space by adapting to new sensors and platforms.

The ASPRS Outstanding Technical Achievement Award was introduced in 2012. This Award consists of a silver presentation plaque mounted on a wood panel plus a check for $7,000.

Purpose: This grant is designed to reward the developer[s] of a specific breakthrough technology that causes quantum advances in the practice of photogrammetry, remote sensing or geographic information systems in the United States.

Donor: In 2011, the ASPRS Foundation received a very generous individual donation from Lifetime Achievement Awardee and ASPRS Fellow Clifford W. Greve to endow a new Outstanding Technical Achievement Award. This award is now endowed at the $7,000 level.

The ASPRS Lifetime Achievement Award

Not awarded this year

The ASPRS Lifetime Achievement Award (formerly the Honorary Lifetime Achievement Award and the Honorary Member Award) is the highest award an ASPRS member can receive, and there are only 25 living Lifetime Achievement Awardees of the Society at any given time. Candidates are chosen by a Nominating Committee made up of the past five recipients of the award and chaired by the most recent recipient.

Purpose: Initiated in 1937, this life-time award is given in recognition of individuals who have rendered distinguished service to ASPRS and/or who have attained distinction in advancing the science and use of the geospatial information sciences. It is awarded for professional excellence and for at least 20 years of service to ASPRS and consists of a plaque and a certificate.

Donor: ASPRS.

ASPRS Photogrammetric Award (Fairchild)

Not awarded this year

Purpose: The Photogrammetric Fairchild Award is designed to stimulate the development of the art of aerial photogrammetry in the United States. Practicability is the essence of the Award and is the basis for the review of all candidates.

Donor/Aard: ASPRS. The award consists of an engraved presentation plaque.

The International Educational Literature Award (IELA)

Not awarded this year

The Award consists of the following: A set of manuals published by ASPRS; A five-year e-subscription to Photogrammetric Engineering & Remote Sensing; Proceedings of the annual conference for a five-year period.

Purpose: to improve the quantity and quality of the literature in the library of the recipient Institution that deals with the mapping sciences (i.e., photogrammetry, remote sensing, GIS, and related disciplines).

Donor: ASPRS.

George E. Brown, Jr. Congressional Honor Award

Not awarded this year

Purpose: This award was established in honor of Congressman George E. Brown, Jr., and the contributions he made to advance the benefits of imagery and geospatial information to society. The award is given periodically to recognize members of the U.S. Congress whose leadership and personal efforts have advanced the science, engineering, application, education, and commerce of imaging and geospatial information.

Donor: ASPRS.

Student volunteers Youssef Kaddoura, Ali Alruzuq, and Oscar Duran with Karen Schuckman. Courtesy O. Duran.