

Annual Report 2020-2021



Annual Report

(Fiscal Year July 1, 2020-June 30, 2021)

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Report from the President



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On behalf of the Governing Council of the Association for Pathology Informatics (API), I am pleased to provide the President’s letter for this year’s API Annual Report. The API was formed in 2000 and is dedicated to the specialty of Pathology Informatics. Its mission is to promote the field of Pathology Informatics as an academic and clinical subspecialty of Pathology and Laboratory Medicine and, through its efforts, further substantiate pathology’s relevance into the future as the most critical component for precision patient care. Most prominently this year, the COVID-19 global pandemic initiated advocacy/public actions to support pandemic pathology practice, resulting in innovative research and education.

This year represents our thirteenth year as a separately chartered and fully independent professional association. With 747 active members, 27 Teaching Institution and Non-Profit Program members, we continue to make considerable progress in advancing Pathology Informatics as a valued and respected subspecialty of Pathology. However, we recognize that this growth can only happen if we remain open to self-reflection and improvement. While API reflects a diverse membership from around the world, with individuals of differing backgrounds, experiences, and identities, it must not take this for granted. That is why API will introduce new initiatives in the coming year to recruit, retain, and advance underrepresented groups to uphold its responsibility to promote diversity, equity, and inclusion in the field of pathology informatics.

Some of the highlights of the last year are listed below and are mentioned in greater detail within the pages of this annual report.

EDUCATION:

- **Pathology Informatics Summit 2021:** In consideration of the COVID-19 global pandemic, the Governing Council voted to hold a virtual Summit for 2021. Utilizing Zoom and e-Posters, the May 5-7, 2021 Pathology Informatics Summit Meeting promised to be the best assemblage to date of the top thought leaders in clinical laboratory informatics and anatomic pathology informatics providing in-depth coverage of machine learning and artificial intelligence, imaging analytics and whole slide imaging workflow solutions.
- **The API Virtual Classroom Series:** The API Virtual Classroom Series was introduced to fill learning gaps in absence of in-person meetings in 2020. API provided educational opportunities for its members and those interested in furthering their understanding of informatics. Sessions covered Foundational Topics in Pathology and Clinical Laboratory Informatics, R Language Primer and Programming Symposium on Data Sciences, and HIMA Imaging Science. Attendees were able to claim CME credits for sessions, provided through the University of Michigan.
- **Digital Pathology and Artificial Intelligence Workshop:** Across three consecutive Thursdays in October 2020, API held the “VIRTUAL Digital Pathology and AI Workshop 4.0.” Sessions emphasized the practical considerations for digital pathology and artificial intelligence relevant to home practices. 75 registrants attended a total of nine 30-minute lectures by national and international experts. Included in the workshop was a virtual tour of the digital pathology labs at Memorial Sloan Kettering Cancer Center in New York City. Attendance and engagement was robust despite moving from in-person to a virtual meeting space.
- **API/Sunquest Educational Webinars:** API and Sunquest provided highly relevant webinars building upon the previous year’s series exploring how institutions could overcome the operational setup, communication and analytics challenges health systems faced with responding to COVID-19. These webinars are free of charge to API members and are also available to be downloaded from the members’ only area of the API website. We thank Dr. Bruce Friedman for his outstanding efforts and vision in organizing these sessions.



Report from the President

PAST PRESIDENTS

2001

Michael J. Becich, MD, PhD
University of Pittsburgh School of Medicine

2002-2003

Bruce A. Friedman, MD
Pathology Education Consortium

2004

Walter H. Henricks, III, MD
Cleveland Clinic

2005

J. Mark Tuthill, MD
Henry Ford Health System

2006

Jules J. Berman, MD, PhD
Freelance Medical Writer

2007

Ulysses J. Balis, MD
University of Michigan Health System

2008

Michael G. McNeely, MD, FRCPC (1944-2009)
Consultant-Medical Informatics

2009-2010

Myra L. Wilkerson, MD
Geisinger Health System

2011-2012

Ronald S. Weinstein, MD
University of Arizona

2012-2013

Raymond D. Aller, MD
University of Southern California

2013

Liron Pantanowitz, MD
University of Michigan Health System

2014

Alexis Carter, MD
Emory University

2015

Rodney Schmidt, MD, PhD
University of Washington

2016

Michael Riben, MD
MD Anderson Cancer Center

2017

John Gilbertson, MD
University of Pittsburgh School of Medicine

2018

David McClintock, MD
Michigan Medicine

2019

Monica E. de Baca, MD
MD Path LLC

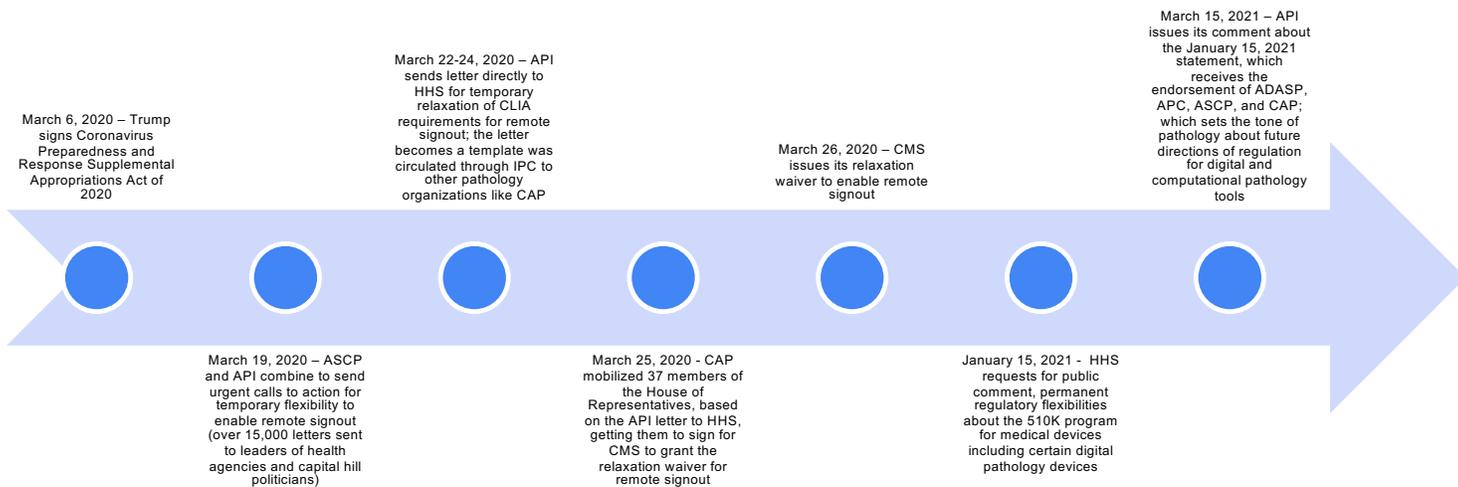
2020

Mary E. Edgerton, MD, PhD
MD Anderson Cancer Center

- **Journal of Pathology Informatics:** JPI is eleven years old and continues to publish important articles in the field of pathology informatics. This vehicle to disseminate our published work has become a major player in shaping our field. We are deeply indebted to the outstanding efforts of founding and current Editors-in-Chief Anil V. Parwani, MD, Ph.D and Liron Pantanowitz, MD for providing us with this peer-reviewed, open-access, PubMed-indexed resource.
- **Teaching Program Memberships:** The API Teaching Institutional Members continue to make significant contributions to both the success of API and to the success of the Pathology Informatics Summit. A significant number of institutional trainees attend various workshops along with many prominent and active pathology department faculty. We value our teaching institution program members and are committed to expanding their numbers this year.
- **Presence of API in National Informatics Training Through Pathology Informatics Education Resource (PIER):** Official representatives of the API have been involved in numerous national initiatives. The Pathology Informatics Education Resource (PIER) has been jointly developed by the API in collaboration with the College of American Pathologists (CAP), Association of Pathology Chairs (APC) and other organizations. This resource is intended to help pathology programs to train our pathology residents in informatics because of the ever-increasing central nature of informatics to our profession.
- **Other API Educational Programs:** The API was represented at a number of national conferences in 2020. API-branded content was delivered at the annual meetings of the College of American Pathologists and the Association for Molecular Pathology. The API will continue to participate as a Companion Society of the United States and Canadian Academy of Pathology (USCAP) and present at the annual USCAP meetings. API-branded content has also been delivered to the Pathology Visions meeting held by the Digital Pathology Association.
- **Presence of API in Spearheading National Initiatives for Digital and Computational Pathology Through Expert Advocacy:** In 2020, during COVID surges and throughout 2021, API shined at its finest as expert champion advocates. During late February and early March 2020, the allowance relaxation to perform remote signout was languishing because of byzantine stringent CLIA regulation. During that time, the COVID surges were endangering an already aging pathologist workforce by forcing on-premise diagnostic work. In response, API spearheaded the charge in writing the first letter to HHS addressing this problem. API then mobilized the larger pathology organizations like the American Society for Clinical Pathology (ASCP) and the College of American Pathologists (CAP). API's orchestration was the focused leadership to coordinate and snowball the efforts of the large pathology organizations into a unified voice for relaxation of CLIA during COVID. As a result, on March 26, 2020 came the granted relaxation of CLIA to allow for remote signout. On January 15, 2021, HHS issued a shocking statement to permanently relax regulation on selected digital pathology devices. By March 15, 2021, API responded to HHS in a statement that garnered the support, again, of many pathology organizations, including ASCP and CAP, but also the Association of Pathology Chairs (APC) and the Association of Directors of Anatomic and Surgical Pathology (ADASP). The statement becomes the first to lay out a position that reflects a central tendency of pathology regarding the regulation of devices in digital and computational pathology and is likely the starting point for any future discussion for pathology organizations in the regulation of digital and computational pathology devices. By spearheading these landmark national initiatives through orchestration and leading the multiple pathology organizations to a common goal, API shows that it is the only organization uniquely positioned in its expertise to drive transformative policies for digital and computational pathology. Furthermore, API, being the watchdog for informatic issues affecting pathology practice, will continue to drive future national efforts by providing expert advocacy on the various domains of pathology informatics.



Report from the President



I want to recognize the efforts of the staff at API who have helped to move this organization in a positive direction. Nova Smith has truly been the cornerstone of API operations, serving as the API Executive Director, Senior Course Manager, and Managing Editor performing a wide variety of functions for the organization and ensuring that the leadership of API addresses salient issues. She has been joined by Beth Gibson of the University of Michigan as Conference Manager who has also helped with the CME process and other organizational responsibilities. We continue to appreciate the expertise of Rebecca Boes of the University of Pittsburgh, our Webmaster. We would also like to welcome Grace Chae who has stepped in to help with several projects as API Executive Assistant and JPI Editorial Assistant. Without the collective efforts of these important individuals, the API would not be as successful as it is today.

A special set of thanks is due to our active API members and Teaching Institutional and Non-profit members, including but not limited to members of the API Governing Council, who have dedicated so much time and effort to the advancement of this organization. I have greatly enjoyed my term as President of this wonderful organization and its members. Pathology Informatics is critically important for accurate, efficient, and improved patient care, and as such, it is the key to the future success of the discipline of Pathology and all of its subspecialties.

Sincerely,

S. Joseph Sirintrapun, MD
API President 2021.



History and Mission

History: API was founded in 2000 by pathologists interested in defining Pathology Informatics (PI) as a clinical subspecialty within the medical discipline of Pathology. API was initially supported by the Department of Biomedical Informatics and the University of Pittsburgh School of Medicine until API became financially independent. The University of Michigan currently provides additional administrative support for API.

Mission: Promote the field of Pathology Informatics as an academic and a clinical subspecialty of Pathology and Laboratory Medicine and further substantiate pathology's relevance into the future as the most critical component for precision patient care.

What is Pathology Informatics? Pathology Informatics recognizes the disruptive role of new technologies and strives to facilitate adoption of information-driven diagnostic tools that deliver better patient care and enhance our understanding of disease-related processes. Such new diagnostic technologies include whole slide imaging (WSI), next-generation sequencing (NGS), and emerging technologies like methylation assays and proteomics. Such technologies have resulted in what is commonly termed "big data" and require specialized techniques for implementation, management, and analytics. In addition, PI works to refine the data generated by diagnostic technologies currently used in clinical laboratories and from reporting performed from anatomic pathology laboratories. Through these efforts, PI positions itself as the data stewards for pathology, and having stewardship over critical diagnostic pathology data substantiates pathology's relevance for enhancing patient care.

Goals:

- Advance Pathology Informatics through research, scientific meetings, and electronic and printed communications
- Provide educational activities that disseminate knowledge to a broad audience and support the practice of Pathology Informatics
- Support "democratization" of diagnostic pathology data by eliminating or integrating data silos that hinder multi-institutional sharing of data and impede better public health, patient care, and research
- Develop standards for the storage and exchange of data and mechanisms for reporting, transferring, and merging diagnostic data while maintaining the needed level of confidentiality and appropriate stewardship of the data
- Play an active role in legal, ethical, social, regulatory, and governmental issues related to Pathology Informatics
- Prepare Pathology for upcoming paradigm shifts in practice like primary digital signout and incorporation of artificial intelligence
- Define the technological barriers that current technologies have in accommodating the upcoming technological paradigm practice changes, using a systems-based approach
- Develop relationships with other professional societies and industry partners that share similar interests and goals and synergize efforts to achieving the above listed goals
- Continue our efforts to recruit women and minorities from the international pathology informatics community as API members, to serve on API committees and the JPI editorial board, and as invited speakers for our national meeting and educational workshops

Activities: Informaticians seek to continuously improve laboratory information technology/systems, enhance the value of laboratory test data, and develop computational algorithms and models aimed at deriving clinical value from new data sources. We offer a broad array of expertise in the primary informatics pillars of:

- Information fundamentals
- Information systems
- Workflow and process
- Governance and management
- We support clinical laboratory operations, enterprise informatics and IT initiatives, academic research, and education



Annual Summit (May 5-7, 2021)

With over 40 years of combined experience in the running of both the APIII and Lab Infotech Summit meetings, the current conference organizing committee deeply understands the field of Pathology Informatics and the contemporary issues in our specialty that demand coverage. Without question, the PI Summit 2021 should be on the calendar for anyone interested in staying current in this very fast-paced and important subspecialty of pathology. The Association for Pathology Informatics provided trainee awards to the meeting for pathologists in training and other graduate students working in the pathology informatics spaces.

After completing this activity, participants will be able to: 1) understand new opportunities for data management and collaboration within the healthcare enterprise; 2) improve and grow their clinical informatics skills; 3) initiate machine learning and AI tool development; 4) meet colleagues and actively discuss informatics topics with subject matter experts; 5) find mentoring opportunities in informatics; and 6) develop new research collaborations and stimulate new research opportunities.

While traditional in-person Annual Summit Meetings include a Boot Camp session, this year, API moved it to a separate virtual two-day event on September 14-15, 2021.

Plenary Session:

| | | |
|---|---|---|
| <p>“Steady Progress with Realizing Clinical-Grade AI for Histopathological Diagnosis: The European Experience” Jeroen van der Laak</p> | <p>“One Step at a Time: The Leeds Experience of Digital Pathology from Research to National Implementation” Darren Treanor</p> | <p>“Health Equity and Justice- What Does Data Have to Do with It?” Melissa Upton</p> |
|---|---|---|

Track Lectures (May 5):

| Track 1: Digital Pathology | Track 2: Applied Informatics | Track 3: Selected Abstract Presentations |
|--|---|--|
| <p>“A Practical Guide to Digital Pathology Training, Validation and Primary Diagnostics” Bethany Williams</p> | <p>“Migration and Display of Legacy Anatomic Pathology (AP) Reports in the Beaker AP module” Kalyani Patel</p> | <p>“Multi-Biomarker Analysis for Hodgkin Lymphoma using Automatic Registration” Abubakr Shafique</p> |
| <p>“Update of The College of American Pathologists Whole Slide Imaging Validation Guideline: What’s The Same? What’s New?” Andrew Evans</p> | <p>“LIS Data Extraction, Analytics, and Automation via Third Party Vendor” Samuel Barasch</p> | <p>“Robotic Process Automation: A Novel Method in Streamlining Digital Pathology Validation” Mehrvash Haghighi</p> |
| <p>“The Impact of Digital Pathology, Artificial Intelligence and Image Analysis on Lab Operations and Workflow” Lisa-Jean Clifford</p> | <p>“Deployment of an LIS Driven Courier and Sample Tracking Program: “LabTracks” J. Mark Tuthill</p> | <p>“Federated Learning for Digital Pathology: Training Algorithms without Accessing Patient Data to Protect Patient Privacy” Fahime Sheikhzadeh</p> |

Track Lectures (May 6, Morning):

| Track 1: Digital Pathology and Research Applications | Track 2: Clinical Laboratory and Artificial Intelligence | Track 3: Selected Abstract Presentations |
|--|--|--|
| <p>“Digital Pathology De-Identification at Scale” Luke Geneslaw</p> | <p>“Artificial Intelligence & Machine Learning in the Clinical Laboratory: Moving Towards a Virtual Laboratory Consultant” Jansen Seheult</p> | <p>“Histopathology Image Search for Lymphoma Diagnosis Directly from Hematoxylin and Eosin Slides” Areej Alsaafin</p> |
| <p>“Linguistic Rules for Learning Subjective Tissue Similarity Assessment” Hamid Tizhoosh</p> | <p>“Unsupervised Analysis of Genome-Wide Copy Number Data in Brain Tumors Using R” Drew Pratt</p> | <p>“Efficacy of PanopticNets for 3-Dimensional Segmentation of Confocal Microscopy Imaging Data” Cole Pavelcheck</p> |
| <p>“A Digital Pathology Repository of COVID-19 Pathology” Stephen Hewitt</p> | <p>“Combining Analytics, Machine Learning, and Decision Support to Improve the Value of the Clinical Laboratory” Anand Dighe</p> | <p>“High Throughput Truthing (HTT): Pathologist Agreement from a Pilot Study” Brandon Gallas</p> |



Annual Summit (May 5-7, 2021)

Track Lectures (May 6, Afternoon):

| Track 1: Digital Pathology and Quality Operations | Track 2: Informatics and Management | Track 3: Informatics Training and Education |
|---|--|---|
| “Maintaining Quality Diagnosis with Digital Pathology: A Practical Guide to ISO 15189 Accreditation” Bethany Williams | “Laboratory Testing from the Patient Perspective” Edward Klatt | “Update on Pathology Informatics Essentials for Residents (PIER) Curriculum” Scott Anderson |
| “Oncoclinicas Transformation to Digital” Razik Yousofi | “Why Lab R.O.I. is Rarely Obtained Information...and How to Get It.” Dennis Winsten | “Clinical Informatics Fellowship” Bruce Levy |
| “Digital Pathology Operations at MSKCC and COVID-19 Pandemic Response” Orly Ardon | “Development of a Web-Based Tool for Anatomic Pathology Quality Assurance Activity.” Kalyani Patel | “The Inside Scoop – Developing Your Career at Any Stage” Jocelyn Clarke |

Track Lectures (May 7):

| Track 1: Digital Pathology and Artificial Intelligence | Track 2: Clinical Informatics | Track 3: Selected Abstract Presentations |
|---|---|---|
| “Ensuring Ethical Accountability with AI” Brian Jackson | “Business Development Lead – Digital Pathology” David Boissonault | “Integrated diagnostics is here to stay – how Hospital for Special Surgery’s single platform implementation succeeded.” |
| “FIBI: Novel Slide-Free Microscopy for Direct Tissue-To-Digital Histology” Richard Levenson | “A Website for Curating Blood Group Antigen Phenotypic and Genetic Data” William Lane | “Custom Web Applications for Continual Improvements to Laboratory Workflows” Michelle Stoffel |
| “Exploring the Dark Matter of Histopathology with High-Dimensional Machine Learning Approaches” Ulysses Balis | “Automated Construction of EHR-Based Computable Phenotypes for Identification of Specific Patients” Daniel Herman | “Mycobacterial Detection and Localization on WSI Using Machine Learning” Chady Meroueh |
| | “Full-text Search, Information Visualization, Intelligent Alerts, and Interoperability” Peter Gershkovich | “An AI-Based Solution for Cancer Detection: First Deployment in Clinical Routine in a US Pathology Lab” Juan C. Santa Rosario |

Trainee Awardees

Mohamed Amgad, MBBS
Northwestern University



Omar Baba, MD
American University of Beirut
Medical Center



Martin Burks, MD
MBA Wake Forest University
Baptist Medical Center



Qiangqiang Gu, PhD student
University of Minnesota



Ashley Hein, MD
University of Nebraska Medical
Center



Ashish Mishra, MD
Henry Ford Health System



Takashi Ohnishi, PhD
Memorial Sloan Kettering Cancer
Center



Vandana Panwar, MD
University of Texas Southwestern
Medical Center



Cole Pavelchek, Medical Student
Washington University School of
Medicine in St. Louis



Hirotsugu Sakamoto, MD, PhD
Memorial Sloan Kettering Cancer
Center



Ruhani Sardana, MBBA
The Ohio State University



Swati Satturwar, MD
University of Pittsburgh Medical
Center



Brian Vadasz, MD, MSc
McGaw Medical Center of
Northwestern University



**Jayalakshmi Venkateswaran,
MBBS**
Danbury Hospital



Nalan Yurtsever, MD
Zucker School of Medicine at
Hofstra/Northwell



Christopher Zarbock, MD
University of Minnesota



Yonah Ziemba, MD
Northwell Health



API Trainee Award Donors and Sponsors

The 2021 PI-Summit Planning Committee is pleased to have received financial support from Bob McGonnagle from CAP Today and Edward Klatt, MD to fund webinar trainees to virtually attend the 2021 API Annual Summit.



Bob McGonnagle
CAP Today



Edward Klatt, MD
Mercer University

API Lifetime Achievement Award (posthumous)

The API Lifetime Achievement Award (formerly called the "API Honorary Fellow Award") was established by the API Governing Council in 2002. The Award recognizes individuals who have made significant contributions to the development of pathology informatics as a clinical and academic subspecialty of pathology. Nominations for the award are solicited from the API membership and the API Council selects the recipient. The 2010 and subsequent awards will be presented at Pathology Informatics conference. (Previous awards were presented at either APiII or LabInfoTech Summit.)



Mark Boguski, MD, PhD

The 2021 API Lifetime Achievement Award was posthumously awarded to Dr. Mark Boguski. Mark Boguski was born in Cleveland Ohio. He graduated from The Johns Hopkins School of Medicine in 1976. From there he went to St Louis where he graduated with an MD/PhD from Washington University. Following his training as a pathologist at Barnes Jewish and Children's Hospital in St Louis, he joined the National Institutes of Health as a Medical Staff Fellow in 1988. He was one of the original Medical Staff Fellows at the National Library of Medicine National Center for Biotechnology Information and worked with the Human Genome Project from 1990 until 2003.

He was a creative genius who was one of the original innovators in bioinformatics long before that term was really understood in both science and medicine. Mark was one of those rare individuals who could encourage both scientific innovation and commercial translation in a way that was inspiring to all around him. His early ventures in Rosetta Genomics set the stage for his career in both academia and industry. He was a visionary leader, inspirational commercial translationalist, and a pioneer in bioinformatics well deserving of the API Lifetime Achievement Award. His life's work is foundational to so many of the great things coming out of Pathology today, including understanding the role the genome plays in human disease, the implementation of Precision Medicine and, most importantly, the impact one gentle giant can mean to this discipline.



The API Virtual Classroom Series: In order to fill learning gaps due to the lack of in-person meetings in 2020, API provided CME credit-eligible educational opportunities for its members and those interested in furthering their understanding of informatics. Generous grants from Dr. Edward Klatt (Mercer University) and Dr. S. Joseph Sirintrapun (Memorial Sloan Kettering Cancer Center) provided scholarships for webinar trainees for the following workshops:

- June 24, 2020 - “Informatics Impact on the Clinical Diagnostic Laboratory and the Healthcare Enterprise”
- July 16-17, 2020 - “Introduction to R Workshop Interactive Webinar”
- August 26, 2020 - “Digital Pathology Realized: Real-World Advice from the Experts”
- September 23-24, 2020 - “Foundational Topics in Pathology Informatics”
- December 9, 2020 - “Artificial Intelligence and Machine Learning in Pathology”

Plans to continue the series are as follows:

- June 22, 2021 - “HIMA Workshop: How to collaborate with image analysis scientists?”
- July 15, 16, 2021 - “Introduction to R Workshop Interactive Webinar”
- September 14, 15, 2021 - “Pathology Informatics Bootcamp”

Digital Pathology Workshop 4.0: On October 8, 15, and 22, 2020, sessions emphasized the practical considerations for digital pathology and artificial intelligence relevant to home practices. 75 registrants attended a total of nine 30-minute lectures by national and international experts. Included in the workshop was a virtual tour of the digital pathology labs at Memorial Sloan Kettering Cancer Center in New York City.

Learning objectives for registrants sought to improve understanding of:

- the directions for digital pathology and AI from U.S. and international perspectives (given the advances in technology, market shifts, regulatory changes, and transformation in pathology culture)
- the deployment of digital pathology with operational considerations for remote sign-out, optimization of surgical pathology workflows and information system integration
- AI fundamentals with future possibilities for using AI.

Each of the three sessions were followed by a separate video meeting link to provide registrants the opportunity to interact with 2 industry representatives to learn more about their respective products and solutions.

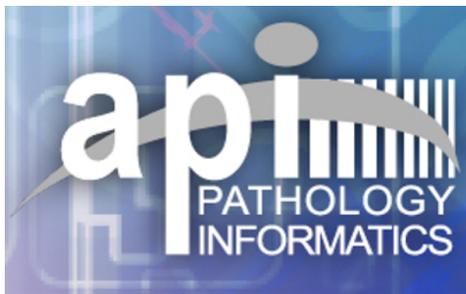
[API will hold the next Digital Pathology Workshop 5.0 virtually in partnership with Michigan Medicine and Memorial Sloan Kettering Cancer Center on November 3-5, 2021.](#)

API/Sunquest Educational Webinars: Beginning April 1, 2020, API and Sunquest sponsored highly relevant webinars exploring how institutions could overcome the operational setup, communication and analytics challenges health systems face with responding to COVID-19. These webinars were free of charge to API members and were also available to be downloaded from the members’ only area of the API website. Webinars continued beyond the 2019-2020 fiscal year to include the following sessions:

- July 29, 2020: “Part 4 - Responding to COVID-19: Organizational and Strategic Insights for Clinical Lab Part 1”
- September 22, 2020: “Part 5 - Responding to COVID-19: Organizational and Strategic Insights for Clinical Lab Part 2”
- June 9, 2021: “Business and Clinical Analytics as Key Components of Lab Operations”

While Sunquest co-sponsors these annual sessions, they are free from commercial interests/promotions. They are a great way to provide educational content to specific audiences. We are grateful to Dr. Bruce Friedman for his outstanding efforts and vision in organizing these sessions.

Clinical Informatics Medical Subspecialty: Clinical Informatics (CI) is a board-certifiable subspecialty primarily housed in the American Board of Preventive Medicine and co-sponsored by the American Board of Pathology. Pathologists are the only candidates outside of Preventive Medicine who are allowed to register for the exam through their own specialty board. Currently, candidates can qualify for the exam by either completing an ACGME-accredited fellowship or through the Practice Pathway. Since the first exam administered in October 2013, 2,262 physicians from 24 specialties have become boarded, with pathologists comprising 158 (7%) of total CI diplomates. The year 2020 featured Cohort 8, consisting of 227 diplomates, 17 of whom were pathologists (representing 7.5% of 2020’s diplomates). Of note, 2022 will be the last year one can apply for the CI board exam through the Practice Pathway, barring an extension by the American Board of Medical Specialties.



Journal of Pathology Informatics (JPI)

The Journal of Pathology Informatics (JPI) is an open access, peer-reviewed journal dedicated to the advancement of pathology informatics. This is the official journal of the Association of Pathology Informatics (API). The first issue was published in March 2010. The Journal of Pathology Informatics (JPI) is now in its eleventh year and JPI continues to grow in recognition with a Citation Rate of 5.5 and an H Index of 18. We continue to have high-quality pathology informatics articles being submitted, with 24 original articles in 2020. Dr. Liron Pantanowitz and Dr. Anil V. Parwani wish to thank the editorial board and the API for their continued support.

JPI aims to publish broadly about pathology informatics and freely disseminate all articles worldwide. All types of papers related to pathology informatics are published, including original research articles, technical notes, reviews, viewpoints, commentaries, editorials, book reviews, and correspondence to the editors. All submissions are subject to peer review by the editorial board and expert referees in appropriate specialties.

The journal is registered with the following abstracting partners: Baidu Scholar, CNKI (China National Knowledge Infrastructure), EBSCO Publishing's Electronic Databases, Ex Libris – Primo Central, Google Scholar, Hinari, Infotrieve, National Science Library, ProQuest, TDNet, Wanfang Data. The journal is indexed with, or included in, the following: DOAJ, PubMed Central, SCOPUS.

Wolters Kluwer and Journal/Association are committed to meeting and upholding standards of ethical behavior at all stages of the publication process. We follow closely the industry associations, such as the Committee on Publication Ethics (COPE), International Committee of Medical Journal Editors (ICMJE) and World Association of Medical Editors (WAME), that set standards and provide guidelines for best practices in order to meet these requirements. For a summary of our specific policies regarding duplicate publication, conflicts of interest, patient consent, etc., please visit <http://www.medknow.com/EthicalGuidelines.asp>.

PUBMED Listed Articles Through January 2021-December 2021:
<https://www.jpathinformatics.org/browse.asp?date=0-0>.

Since the Journal's inception, 77.8% of all submissions were original articles, with the remainder of submissions consisting of Reviews (10.8%), Notes (4.7%), Conference Papers (1.9%), Letters (1.9%), Editorials (1.4%), and Erratum (1.4%).

EDITORS-IN-CHIEF

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Pittsburgh, PA

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Grace Chae
Association for Pathology Informatics

2021

Publisher Report

Journal of Pathology Informatics



Journal Current Status

- Journal of Pathology Informatics is with Wolters Kluwer Health | Medknow since March 2010.
- Journal of Pathology Informatics is the official journal of Association for Pathology Informatics (API). The journal is an online only journal.
- Print ISSN: 2229-5089; Online ISSN: 2153-3539
- The frequency of the journal is bimonthly.
- Scopus citation overview for a set of 212 documents gives **H Index as 18**.
- Current volume number is 12.

Journal's current Indexing

- The journal is registered with the following abstracting partners:
Baidu Scholar, CNKI (China National Knowledge Infrastructure),
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TdNet, Wanfang Data
- The journal is indexed with, or included in, the following:
DOAJ, PubMed Central, SCOPUS

Citations Chart

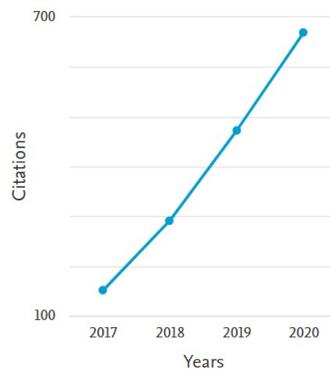
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The above graph shows citation overview for a set of 212 documents and gives H index as 18.

Cite Score

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 [Scopus content coverage](#)

CiteScore 2019 

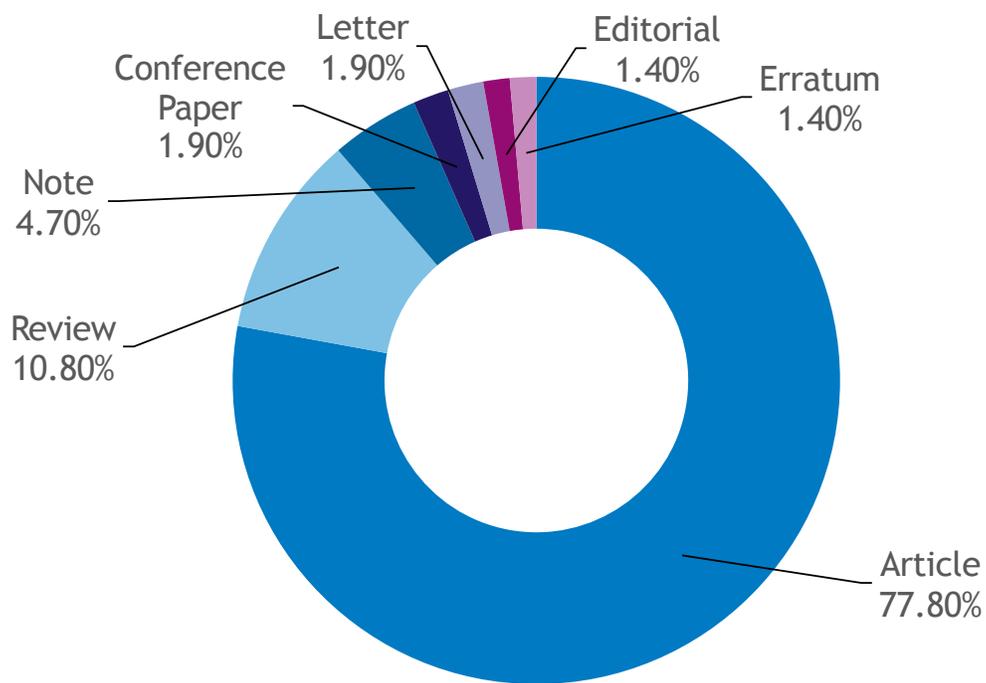
$$5.5 = \frac{878 \text{ Citations 2016 - 2019}}{159 \text{ Documents 2016 - 2019}}$$

CiteScoreTracker 2020 

$$5.5 = \frac{731 \text{ Citations to date}}{133 \text{ Documents to date}}$$

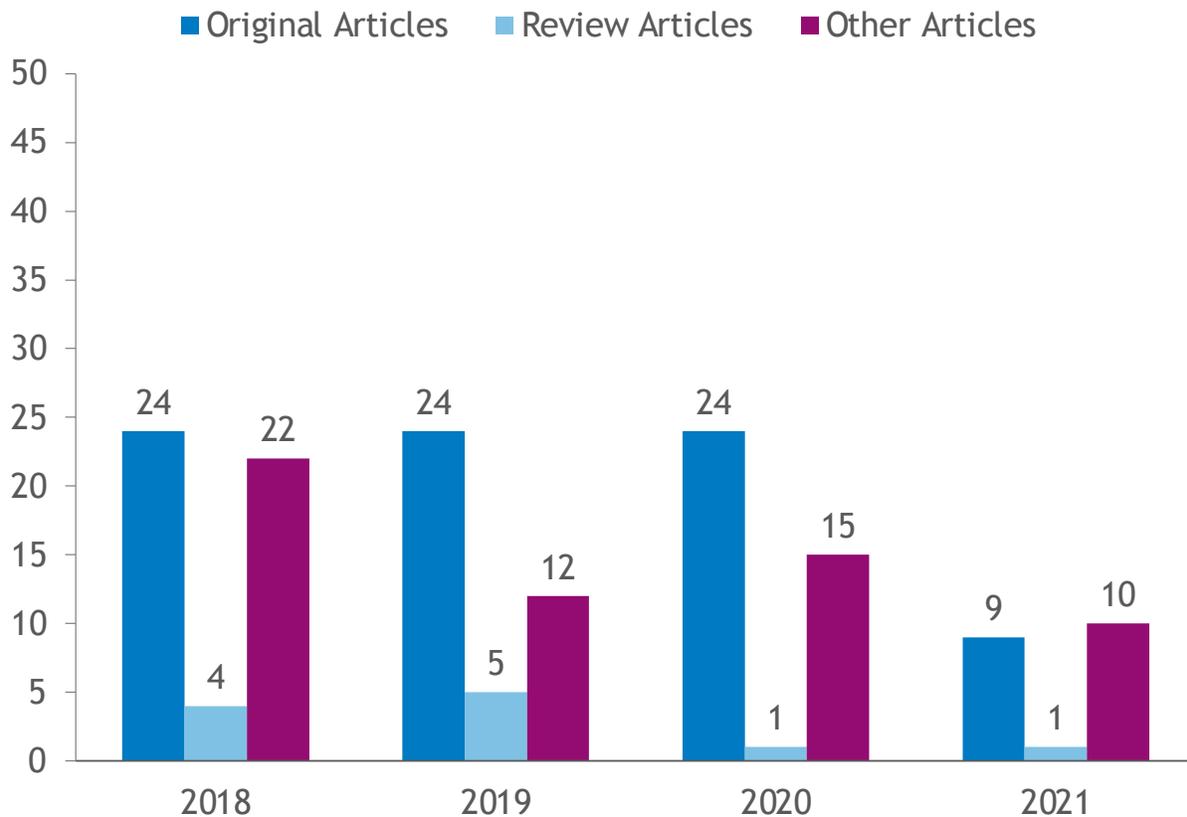
The above image shows the Cite Score of the journal. Cite Score of the journal in 2019 is 5.5

Type of Documents



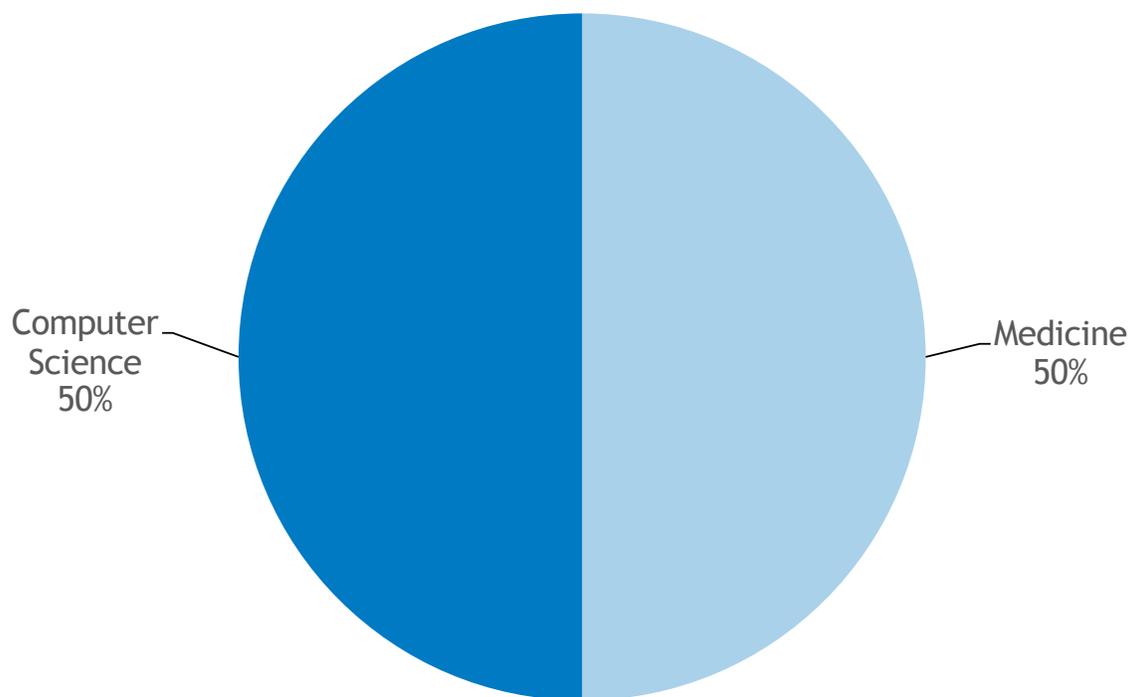
In years 2012- 2021, the journal has published articles majorly comprising of original articles that made up to 77.8% of total articles.

Document Distribution



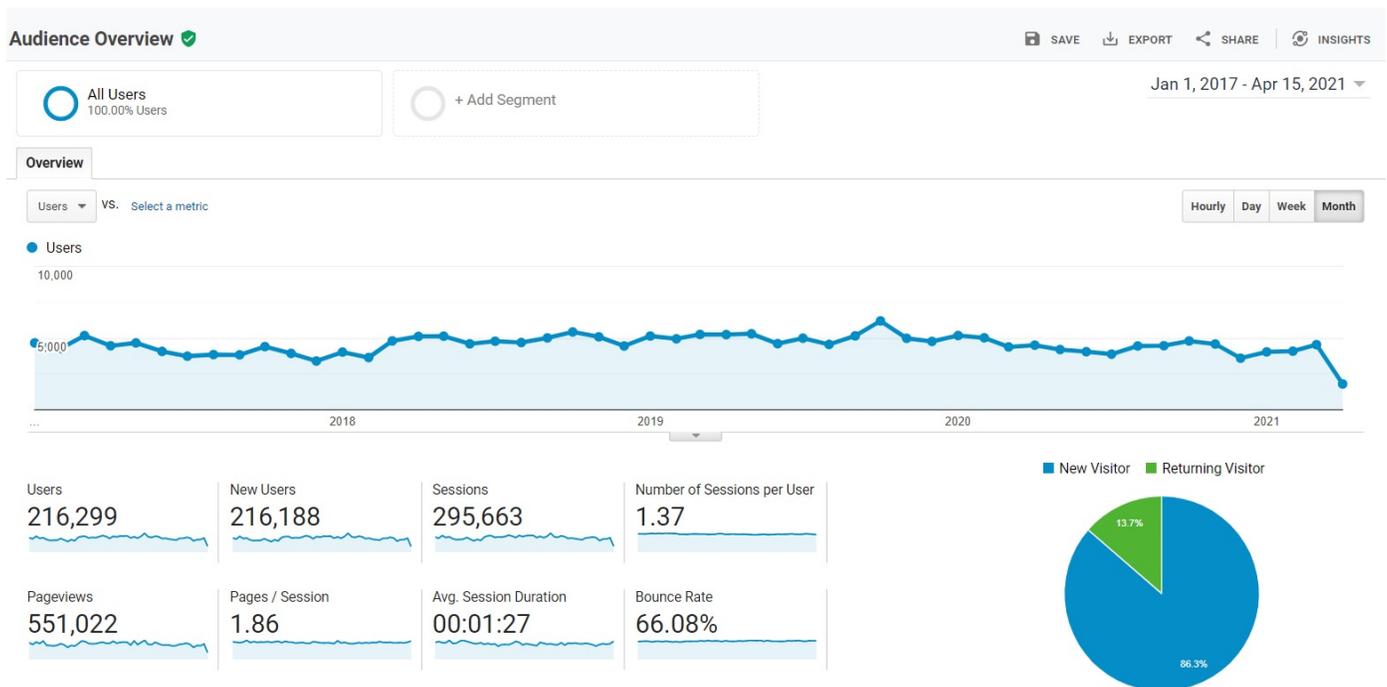
The above chart shows the number of original articles, review articles and other type of articles (case reports, letters to editors, commentaries, etc.) that are published by the journal over the last 3 years.

Subject Area of Documents



In years 2017 - 2021, the journal has published articles in the subject area Computer Science (50%) and Medicine (50%)

Website Visitors Analysis



Above graph displays analysis about journal’s website visitors and details of their visits from 2017 to 2021 (till date).

Mobile Device Information

| Mobile Device Info ? | Acquisition | | |
|-------------------------------------|--|--|--|
| | Users ? ↓ | New Users ? | Sessions ? |
| | 29,023 % of Total: 13.42% (216,314) | 29,182 % of Total: 13.50% (216,199) | 36,141 % of Total: 12.22% (295,676) |
| 1. Apple iPhone | 10,883 (37.47%) | 10,999 (37.69%) | 13,698 (37.90%) |
| 2. Apple iPad | 2,400 (8.26%) | 2,424 (8.31%) | 3,182 (8.80%) |
| 3. Samsung SHV-E250S Galaxy Note II | 678 (2.33%) | 678 (2.32%) | 681 (1.88%) |
| 4. Huawei EML-AL00 P20 | 605 (2.08%) | 605 (2.07%) | 605 (1.67%) |
| 5. Microsoft Windows RT Tablet | 596 (2.05%) | 590 (2.02%) | 774 (2.14%) |
| 6. Xiaomi Redmi Note 4 | 189 (0.65%) | 191 (0.65%) | 244 (0.68%) |
| 7. Samsung SM-G950F Galaxy S8 | 166 (0.57%) | 167 (0.57%) | 231 (0.64%) |
| 8. Xiaomi Redmi Note 5 Pro | 150 (0.52%) | 152 (0.52%) | 204 (0.56%) |
| 9. Samsung SM-G930F Galaxy S7 | 128 (0.44%) | 129 (0.44%) | 152 (0.42%) |
| 10. Samsung SM-G935F Galaxy S7 Edge | 109 (0.38%) | 109 (0.37%) | 149 (0.41%) |

For accessing the journal contents; iPad and iPhones are being used at maximum occasions.

Looking at the growing trends towards such applications it is feasible to launch such applications for the journal.

Country Wise Visitors

| Country ? | Acquisition | | |
|--|--|--|--|
| | Users ? ↓ | New Users ? | Sessions ? |
| | 216,314 % of Total: 100.00% (216,314) | 216,387 % of Total: 100.09% (216,200) | 295,677 % of Total: 100.00% (295,677) |
| 1.  United States | 80,808 (37.28%) | 80,628 (37.26%) | 109,478 (37.03%) |
| 2.  India | 23,368 (10.78%) | 23,424 (10.83%) | 30,786 (10.41%) |
| 3.  United Kingdom | 11,085 (5.11%) | 11,044 (5.10%) | 15,728 (5.32%) |
| 4.  China | 7,131 (3.29%) | 7,055 (3.26%) | 9,237 (3.12%) |
| 5.  Canada | 6,743 (3.11%) | 6,797 (3.14%) | 9,113 (3.08%) |
| 6.  Germany | 5,825 (2.69%) | 5,790 (2.68%) | 8,597 (2.91%) |
| 7.  Japan | 5,131 (2.37%) | 5,156 (2.38%) | 7,540 (2.55%) |
| 8.  South Korea | 4,101 (1.89%) | 4,116 (1.90%) | 5,628 (1.90%) |
| 9.  Australia | 3,933 (1.81%) | 3,937 (1.82%) | 5,479 (1.85%) |
| 10.  Italy | 3,507 (1.62%) | 3,532 (1.63%) | 5,912 (2.00%) |

Above table shows country-wise analysis of journal's website visitors and details of their visits from 2017 to 2021 (till date).

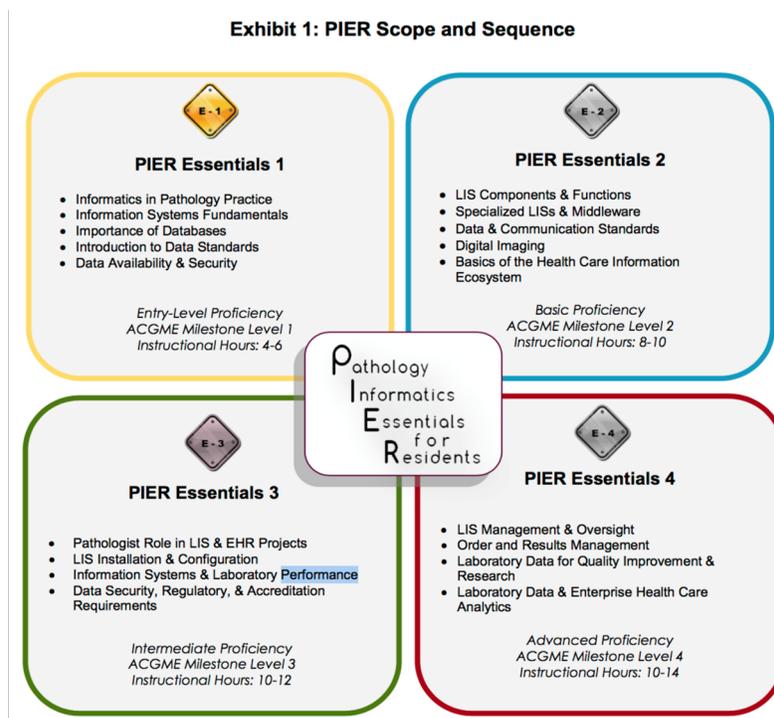
City Wise Visitors

| City ? | Acquisition | | |
|----------------|---|---|---|
| | Users ? ↓ | New Users ? | Sessions ? |
| | 200,227 % of Total: 92.56% (216,314) | 199,822 % of Total: 92.42% (216,200) | 274,553 % of Total: 92.86% (295,677) |
| 1. New York | 4,759 (2.31%) | 4,679 (2.34%) | 6,345 (2.31%) |
| 2. London | 3,133 (1.52%) | 3,008 (1.51%) | 4,128 (1.50%) |
| 3. Bengaluru | 3,130 (1.52%) | 3,097 (1.55%) | 4,049 (1.47%) |
| 4. Chennai | 2,203 (1.07%) | 2,172 (1.09%) | 2,884 (1.05%) |
| 5. Seoul | 2,154 (1.04%) | 2,146 (1.07%) | 3,119 (1.14%) |
| 6. Ashburn | 2,034 (0.99%) | 2,031 (1.02%) | 2,048 (0.75%) |
| 7. Hyderabad | 1,874 (0.91%) | 1,851 (0.93%) | 2,585 (0.94%) |
| 8. Los Angeles | 1,759 (0.85%) | 1,703 (0.85%) | 2,235 (0.81%) |
| 9. Boston | 1,722 (0.83%) | 1,656 (0.83%) | 2,263 (0.82%) |
| 10. Chicago | 1,662 (0.81%) | 1,598 (0.80%) | 2,193 (0.80%) |

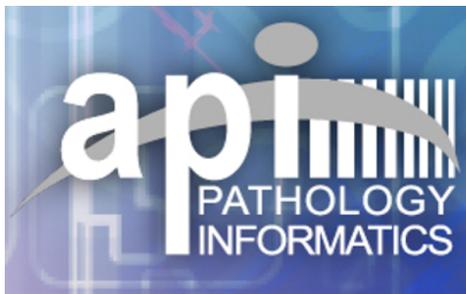
Above table shows city wise analysis of journal's website visitors and details of their visits from 2017 to 2021 (till date).

Presence of API in National Initiatives: The Association for Pathology Informatics believes that pathology informatics is an integral part of the practice of Pathology in the 21st Century and therefore strongly supports informatics education for all pathology residents. This led us into a partnership with the Association of Pathology Chairs and the College of American Pathologists to create Pathology Informatics Essentials for Residents, or PIER. PIER “is a research-based instructional resource that presents training topics, implementation strategies and resource options for program directors and faculty to effectively provide informatics training to their residents and meet ACGME informatics milestone requirements. PIER is also an effective resource for aspiring specialists to develop prerequisite pathology informatics knowledge and skills prior to advanced training or fellowships.” (“Pathology Informatics Essentials for Residents (PIER).” Association of Pathology Chairs, Web. 21 June 2018.) Please visit the PIER website for more information.

In further support for pathology informatics education, API has long provided pathology informatics “boot camps” on the first day of the Pathology Informatics Summit. Recordings of the presentations and the presentation slides have been reviewed and mapped to the PIER Essentials to assist pathology residency faculty in the delivery of pathology informatics knowledge to our residents.



Much has been accomplished since the last PIER update. After the initial launch in late 2014, we transitioned leadership from a working group of informatics experts to the PIER Leadership Committee made up of pathology residency program directors (representing the Association of Pathology Chairs) in addition to two informatics experts (representing the Association for Pathology Informatics and the College of American Pathologists). The committee is supported by staff from each association. The CAP also provides project management and instructional design resources to support the work of the committee. The PIER Leadership Committee is charged with carrying the curriculum forward and supporting its further adoption. We’ve spent the last several years growing the PIER Leadership Committee to include residents, collecting data from stakeholders to understand their needs, using feedback to make curriculum improvements resulting in 3 releases, researching and submitting for grant funding, collaborating with ASCP to 1) pilot test informatics questions for the RISE exam, 2) collect data from residents about their informatics training experiences, and 3) create a separate category for informatics on exam reports so that program directors can monitor resident performance. The committee also provided program director representation to the ACGME Milestones 2 Informatics Work Group.



(PIER Updated Continued)

Release 4 of the curriculum launches in July. Our goal with this release is to streamline the documentation and make PIER easier to implement. Some key improvements include: 1) Updated topics and new PIER outcome statements to better match expectations for graduating residents, 2) Integrated 3 tools used for planning, tracking progress, and documenting completion into 1 tool, 3) Transitioned the Resource Toolkit (85 pages) into four smaller documents, 4) Added a separate tool to track resident progress, 5) Restructured and updated the Practical Exercises, 6) Reduced the number of Recommended Resources per topic, and 7) Streamlined the PIER web page to make information access easier. In terms of next steps, we will continue to:

- Search for grant funding opportunities to support a technology-based curriculum to address known needs (eg, prepared content, assessment, tracking and reporting)
- Focus on enhancing the curriculum with new learning approaches to augment the educational experience
- Strengthen the CAP, API, APC collaboration with PIER; leveraging each association's strengths to achieve our objectives to improve resident informatics education.

As a reminder, PIER is a free curriculum and it can be found on the APC website at: www.apcprods.org/pier.

Other API Educational Programs: The API was represented at a number of national conferences in 2020. API-branded content was delivered at the annual meetings of the College of American Pathologists (CAP) and the Association for Molecular Pathology (AMP). The API will continue to participate as a Companion Society of the United States and Canadian Academy of Pathology (USCAP) and present at the annual USCAP meetings. API-branded content has also been delivered to the Pathology Visions meeting held by the Digital Pathology Association.

Official representatives of the API have also been involved in a number of national initiatives, including, but not limited to the American Society for Clinical Pathology (ASCP), USCAP, and AMP. Select members also participate in multiple standards organizations such as Health Level 7 International (HL7) and Digital Imaging and Communications in Medicine (DICOM) as well as provide guidance on important national topics like the Food and Drug Administration certification of whole slide imaging, computational pathology and algorithm use. Many of our members also provide informatics talks at local, regional, national, and international specialty meetings such as the Companion Society Session, the ASCP Annual Meeting, Digital Pathology Association Annual Session, the American Association for Clinical Chemistry (AACC) Annual Meeting and AACC University Pathology Informatics Boot Camp, Healthcare Information and Management Systems Society, Inc. (HIMSS), and Society for Imaging Informatics in Medicine (SIIM).



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Teaching Institutional Members

Since its inception in 2011, API's Teaching Institutional Membership program has been very successful in attracting the 'best-in-class' academic institutions that have collectively demonstrated leadership in adopting and teaching information technology in the medical (and specifically pathology) specialties. API offers unlimited, free publication of all accepted articles in the Journal of Pathology Informatics to any faculty, resident, or fellow employed at an API Teaching Institution.

In FY2021, API offered 2 new levels of Teaching Institutional Membership in addition to the Basic Membership, Expanded and Premium memberships are now also available. Basic Teaching Membership includes membership for the department chair, 2 faculty/senior staff, and 4 interns, residents, or fellows (your current level of membership). Expanded Teaching Membership includes membership for the department chair, 5 faculty/senior staff, and 8 interns, residents, or fellows. Premium Teaching Membership includes membership for the department chair, 8 faculty/senior staff, and 12 interns, residents, or fellows:

PREMIUM TEACHING INSTITUTIONS:

Columbia University Medical Center

EXPANDED TEACHING INSTITUTIONS:

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The University of California - Irvine School of Medicine
The University of California - Los Angeles David Geffen School of Medicine
Geisinger
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Walter Reed National Military Medical Center
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BASIC TEACHING INSTITUTIONS:

The University of Calgary School of Medicine
University of California at San Francisco
The University of Chicago
East Carolina University in conjunction with Vidant Medical Center
Duke University School of Medicine
Henry Ford Health System
Houston Methodist
University of Illinois at Chicago
The University of Kentucky College of Medicine

Michigan Medicine at the University of Michigan
University of Minnesota Medical School
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School of Medicine at Penn
The University of Pittsburgh Department of Biomedical Informatics
Stony Brook School of Medicine
The University of Texas MD Anderson Cancer Center
Washington University School of Medicine
Yale University School of Medicine

MEMBERSHIP BENEFITS

- Access to official API Listserv, materials, and broad member expertise
- Access to continually updated educational content and features for those without Pathology Informatics expertise and to help current and future Pathology Informatics faculty save time creating educational content by sanctioned reuse of member content. There are currently over 100 recorded lectures and PowerPoint slideshows available from past API meetings (PI Summit, Digital Pathology and AI workshop, etc.) on the API website for members to access and review for educational purposes.
- Access to training webinars, programs, and PIER content
- Discounted publication fees for the API's Journal of Pathology Informatics
- Reduced registration rate for members at the Annual API Summit Meeting
- Networking connections



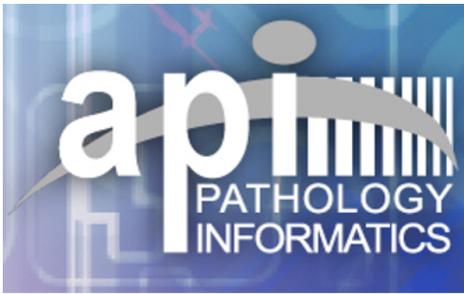
Financial Report

| API SUMMARY BUDGET FY21 (July 1, 2020 to June 30, 2021) | FINAL FY21 |
|---|---------------------|
| API Revenue | |
| API Membership | \$72,895.00 |
| Pathology Informatics Summit 2021 (Net) | \$33,885.91 |
| Digital Pathology Workshop 2019 (Net) | \$20,557.00 |
| Virtual Education (not PI Summit or DPAI) | \$13,358.16 |
| Journal of Pathology Informatics (Net) | (\$16,329.58) |
| Other revenue | \$4,612.15 |
| Subtotal API FY21 Revenue | \$128,978.64 |
| API Expenses | |
| API Membership | \$2,936.93 |
| Staff includes taxes and benefits (includes 1099 staff) | \$95,933.22 |
| Other Expenses | \$21,575.27 |
| Subtotal API FY21 Expenses | \$120,445.42 |
| Profit/Loss FY21 | \$8,533.22 |



Financial Report

| PI SUMMIT 2021 SUMMARY BUDGET | FINAL FY21 |
|---|--------------------|
| PI Summit 2021 Revenue | |
| Registrations | \$45,802.00 |
| Exhibitors | \$26,000.00 |
| Sponsorships (not including travel awards) | \$0.00 |
| Subtotal PI Summit 2021 Revenue | \$71,802.00 |
| | |
| PI Summit 2021 Expenses | |
| CVENT Virtual Platform/DLCC (includes catering, Meeting WiFi, electric, AV, etc.) | \$33,366.85 |
| Hotel and travel costs for staff and planning committee | \$0.00 |
| Faculty Reimbursements (Keynotes) | \$0.00 |
| Print/online ads | \$0.00 |
| Meeting totes, key cards, lanyards | \$210.53 |
| Credit card fees | \$0.00 |
| SAMs and CMEs | \$0.00 |
| Trainee Awardee luncheon | \$1,020.30 |
| Poster/vendor bingo prizes | \$950.00 |
| Graphic Design, advertising, printing and postage (programs, handouts, signage, etc.) | \$1,348.11 |
| Webinar platform expenses (Zoom) | \$0.00 |
| Registration refunds | \$0.00 |
| Sponsor refunds | \$0.00 |
| Exhibitor refunds | \$1,020.30 |
| Staff including 1099 | \$28,657.61 |
| Subtotal PI Summit FY21 Expenses | \$37,916.09 |
| | |
| Profit/Loss PI Summit 2021 FY21 | \$33,885.91 |



Financial Report

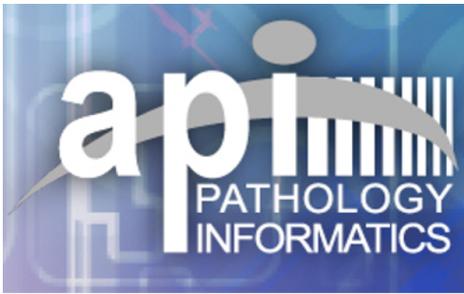
| DPAI WORKSHOP 2020 SUMMARY BUDGET | FINAL FY21 |
|---|--------------------|
| DPAI Workshop 2020 Revenue | |
| Registrations | \$14,857.00 |
| Exhibitors | \$6,000.00 |
| returned faculty reimbursement | \$0.00 |
| Sponsorships | \$0.00 |
| Subtotal DPAI Workshop 2020 Revenue | \$20,857.00 |
| | |
| DPAI Workshop 2020 Expenses | |
| Conference Center (catering, AV, WiFi, etc.) | \$0.00 |
| Hotel charges for Friday dinner, AV, etc. | \$0.00 |
| Speaker honoraria | \$100.00 |
| Faculty and staff travel (hotel, air/car, etc.) | \$0.00 |
| Webinar platform expenses (Zoom) | \$0.00 |
| Graphic design, advertising, printing of handouts and signage | \$200.00 |
| Registration refunds (allowance) | \$0.00 |
| Other Expenses (name badges and holders, desk supplies, etc.) | \$0.00 |
| Staff including 1099 | \$4,033.75 |
| Subtotal DPAI Workshop 2020 Expenses | \$300.00 |
| | |
| Profit/Loss DPAI Workshop 2020 FY21 | \$20,557.00 |



Financial Report

| API VIRTUAL CLASSROOM SERIES FY21 SUMMARY BUDGET | FINAL FY21 |
|---|--------------------|
| Virtual Classroom Series 2020 Revenue | |
| Registrations | \$15,216.30 |
| Virtual Exhibitors | \$0.00 |
| Subtotal Webinar Series 2020 Revenue | \$15,216.30 |
| Webinar Series 2020 Expenses | |
| Webinar Platform expenses (Zoom or other technology) | \$0.00 |
| Speaker honoraria | \$1,300.00 |
| Graphic design/advertising | \$279.14 |
| Other Expenses? | \$0.00 |
| Registration refunds (allowance) | \$279.00 |
| Staff including 1099 | \$14,224.01 |
| Subtotal Webinar Series 2020 Expenses | \$1,858.14 |
| Profit/Loss Webinar Series FY21 | \$13,358.16 |

| JPI FY21 Budget | FINAL FY21 |
|---|----------------------|
| JPI Revenue | |
| Royalties payments from Medknow | \$10,104.80 |
| Fees collected from JPI authors by API | \$3,595.00 |
| Subtotal FY21 JPI Revenue | \$13,699.80 |
| JPI Expenses | |
| Purchases of books for review and postage | \$105.38 |
| Charges from Medknow | \$29,924.00 |
| Subtotal FY21 JPI Expenses | \$30,029.38 |
| JPI - Expenses FY21 | (\$16,329.58) |



Financial Report

| PHILANTHROPIC BUDGET | FINAL FY21 |
|--|-------------------|
| Philanthropic Donations | |
| Contributions (excluding travel awards) | \$500.00 |
| Travel Award Contributions | \$5,667.00 |
| Subtotal FY21 Philanthropic Revenue | \$6,167.00 |
| | |
| Philanthropic Expenses | |
| Travel awards granted | \$5,667.00 |
| Other | |
| Subtotal FY21 Philanthropic Expenses | \$5,667.00 |
| | |
| Philanthropic Donations - Expenses FY21 | \$500.00 |

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